AMERICAN VOCATIONAL JOURNAL

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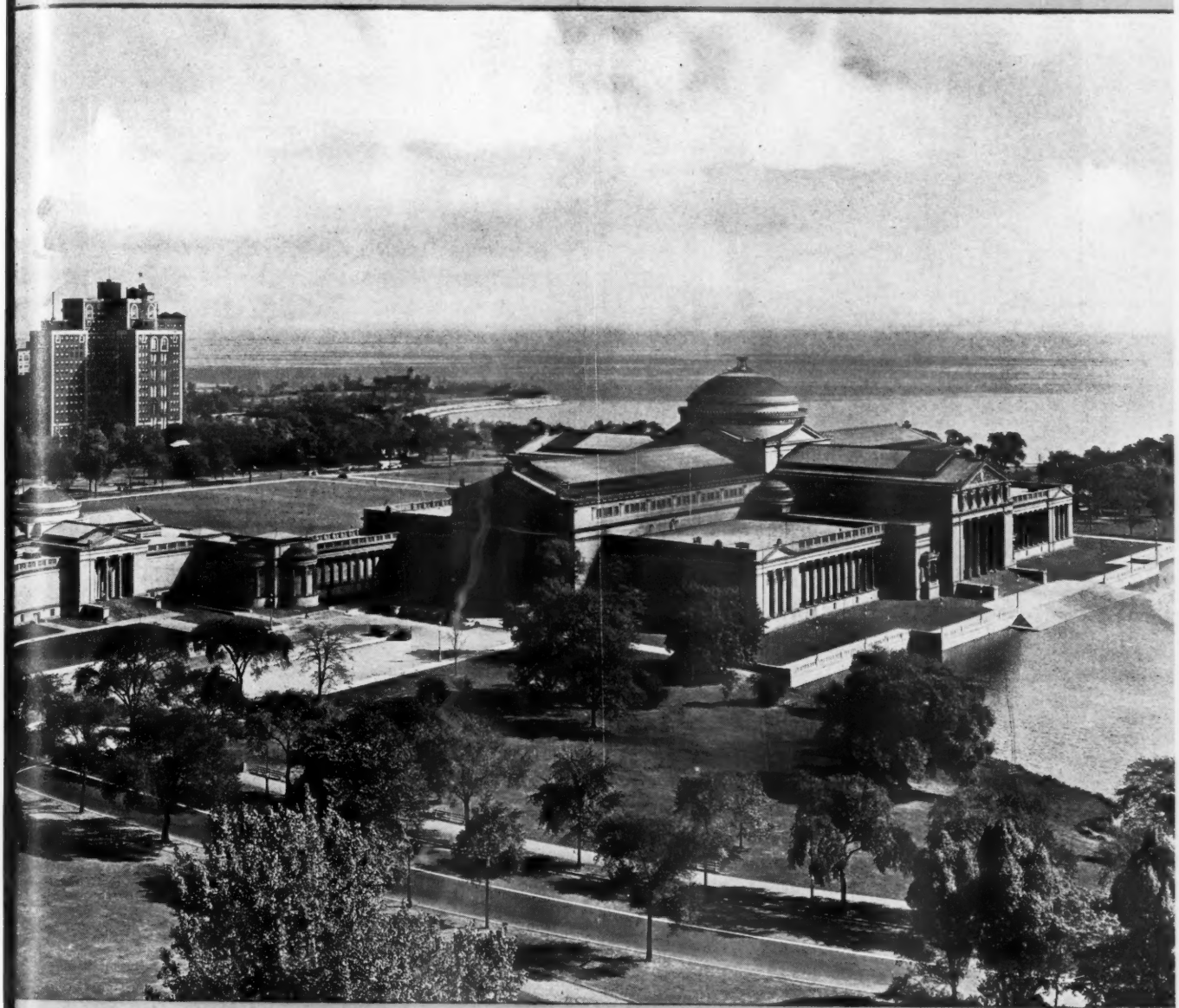
VOLUME 23 • NO. 3 • MARCH, 1948



Headquarters of 1948 Industrial Arts Fair

Courtesy Chicago Museum of Science and Industry

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Don Layman

Publisher of the American Vocational Journal for the Scholastic Corporation, publishers of Scholastic Magazines for classroom use.

American Vocational Journal

OFFICIAL PUBLICATION OF THE AMERICAN VOCATIONAL ASSOCIATION, INC.

MARCH, 1948

VOLUME 23

NUMBER 3

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EDUCATIONAL PRESS ASSOCIATION OF AMERICA

EDITOR-IN-CHIEF:
L. H. Dennis
1010 Vermont Ave., Washington 5, D. C.

MANAGING EDITOR:
George H. Fern
220 E. 42nd St., New York 17, N. Y.

CONTRIBUTING EDITORS

AGRICULTURE, Glen C. Cook, M.S.C., East Lansing, Mich.; PART TIME, R. L. Welch, State Bd. Voc. and Adult Ed., Madison, Wis.; BUSINESS, M. A. Browning, State Bd. for Voc. Ed., Austin, Tex.; HOME ECONOMICS, Mary Gillespie, State College, State College, N. Mex.; INDUSTRIAL ARTS, John R. Ludington, U. of N. Carolina, Raleigh, N. C.; INDUSTRIAL, Thomas Diamond, U. of M., Ann Arbor, Mich.; VOCATIONAL GUIDANCE, C. E. Partch, Rutgers University, New Brunswick, N. J.; REHABILITATION, O. F. Wise, Court House, Birmingham, Ala.

PUBLISHING SERVICES

Furnished by Scholastic Magazines, 220 E. 42nd St., New York; DON LAYMAN, Publisher; GEORGE H. FERN, Mng. Editor; HARRIETT H. CARR, Editorial Asst.; RICHARD WHITEMAN, Advg. Mgr.; MARY JANE DUNTON, Art Editor.

The American Vocational Journal is published monthly, September to June inclusive, by the American Vocational Association, Inc. Entered as second class matter January 29, 1945, at the post office at New York, N. Y., under the act of March 3, 1879. Contents are copyrighted by American Vocational Association, Inc. All members of the American Vocational Association, Inc., receive the Journal. Membership applications should be submitted through State Vocational Association secretary. Subscription prices for libraries and non-members $2.00 a year, single copies 25c. Executive offices at 1010 Vermont Avenue, Washington 5, D. C. Advertising, editorial and production headquarters are at 220 East 42nd Street, New York 17, N. Y. This is the official publication of the AVA.

American Vocational Association, Inc.

American Vocational Association, Inc., advances American Education by developing economic competence of youths and adults. The Association promotes the professional interests of persons engaged in vocational and industrial arts education. It encourages full-time and part-time programs in these fields: Agriculture, Home Economics, Business and Distributive Occupations, Industrial Arts, Industrial Education, Rehabilitation, and Vocational Guidance.

★

Vocational Education Supplements General Education

O. H. Day

VOCATIONAL education as a part of the great program of American education has a peculiar opportunity and a corresponding responsibility. At times there has been a tendency on the part of some working in this area to try to segregate themselves and perhaps develop a little show of their own. This is a mistake, and if vocational education is to meet its responsibility it must be as a definite part of the program of American education. The average public school serves in the field of so-called general education in which training is given for the broad areas of social and economic living. It develops general values which are expected to apply to many general life situations. Vocational education has many of these general values, but it has a special value and responsibility of serving people at the level of their known and specific needs.

We help to build good citizenship by giving youth training which will enable them to develop economic stability and they learn good citizenship by learning to be good producers. We have the opportunity and the responsibility of encouraging the development of wholesome habits and attitudes toward work which will inspire them to do a good job for the sake of the job as well as for the compensation they will earn. We help adults to a better position in life by providing the opportunity of extending their knowledge and skill in their chosen fields of work. Farmers learn to produce more grain, better livestock; women learn to develop better homes. Men and women learn how to handle the commerce of their community better and the mechanic learns how to produce better buildings or better machines for human use. This is truly educational and will certainly tend to produce better citizenship.

Such activities give us an additional responsibility of working in the closest cooperation with the public. Vocational education and the vocational educators cannot ignore the wishes of the public. We are dependent for our training specifications on what men and women want and need to learn in a specific field or for a definite job. This gives us an excellent opportunity to develop strong and friendly relations, but at the same time it places on us a very heavy responsibility to work in closest cooperation with that phase of public life which we serve. During the war training program we got very close to "our public." We demonstrated our ability to do a big job well and to work with business and industry, agriculture, and the home in an effective and intelligent manner. That opportunity is still with us. We must accept our full measure of responsibility as a part of the great overall program of American education.

O. H. Day
Director of Vocational Education
Kansas City, Missouri

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OFFICERS

JULIAN A. McPHEE, *President*
California State Polytechnic College
San Luis Obispo, California

L. H. DENNIS, *Executive Secretary*
American Vocational Association, Inc.
1010 Vermont Ave., N.W.
Washington 5, D. C.

CHARLES W. SYLVESTER, *Treasurer*
2811 Mt. Holly St.
Baltimore 16, Md.

FLORENCE FALLGATTER, *Past President*
Head, Home Economics Education
Iowa State College
Ames, Iowa

DONOVAN R. ARMSTRONG, *V.P. Business Education*
State Department of Education
Baton Rouge 4, La.

MAUDE WILLIAMSON, *V.P. Home Economics Education*
Colorado A & M College
Fort Collins, Colorado

H. C. FETTEROLF, *V.P. Agricultural Education*
State Dept. of Pub. Instruction
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E. L. WILLIAMS, *V.P. Industrial Education*
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Cleveland Public Schools
Cleveland 14, O.

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Elementary student demonstrates results of industrial arts work

Photo by Delmar W. Olson, Kent State University

Industrial Arts in the Elementary School

Adequately Trained Teachers Greatest Immediate Problem

DEWEY F. BARICH*
Head of Industrial Arts
Kent State University, Ohio

TODAY the idea of industrial arts experiences in elementary schools is being accepted with enthusiasm. Some professional leaders are on record in support of the philosophy that a major portion of the elementary school curriculum should revolve about the industrial arts program. Increasingly there is almost universal approval of the point of view that industrial arts on the elementary level contributes to a sound general education.

Other aims, purposes, or objectives often stated include the following: To develop avocational interests through effective utilization of leisure time; to stimulate purposeful planning resulting in greater levels of achievement; to develop an appreciation of the value of industry to society; to develop habits of investigation, experimentation, and creation; to provide means by which children may satisfy the urge to create and to feel the joy of accomplishment; to develop appreciation of good workmanship; to develop safe work habits; to develop understanding and proper use of tools.

According to A. L. Kingzett in *Handcraft as a Part of the Activity Program,* children find real joy and satisfaction in manipulating tools and materials. They are happiest when planning and constructing. . . . Busy hands are happy hands.

As early as 1882 manipulative work was introduced as part of the grammar school curriculum in Montclair, New Jersey. It was given to train the hands to use tools, and was called manual training.

In the book, *The Industrial Arts in Elementary Education,* by Winslow and Gomph, published in 1917, dissatisfaction was expressed with the narrow concept of manual training, manual arts, art work and construction. These authors presented a new emphasis in the elementary school curriculum. They used the then modern term *industrial arts* and their aim was "a presentation of the study of industrial processes and materials, and all hand work introduced will be chosen with a view of giving familiarity with these materials and to making cleaner processes through participation in activities." The approach was to be from the standpoint of general education. The subject matter was to be chosen from the industries most important to man, which may be arranged in the following groups: Stone, clay, and glass products; metals, machinery, and conveyances; wood manufacture; furs, leather, and rubber goods; chemicals, oils, and paints; paper and paper products; books and printed products; textiles and clothing; foods; water, light, and power.

The handwork recommended is based entirely upon the industries studied. The class investigates and collects information from all available sources. Much general material comes through actual contact with those engaged in the industry or those who handle its products. Reference books, writing to manufacturers whose advertisements appear in magazines and newspapers also provide information useful to teachers. The instructor then can make assignments covering

* From a speech given at the AVA convention in Los Angeles, Calif., December, 1947.

such topics as: (1) The value of industry to man—how man is affected by it; (2) the evolution of industry—its heroes of invention; (3) characteristics of the product; (4) analysis of the product; (5) materials employed; (6) processes involved; (7) classification of processes as skilled and unskilled; (8) healthfulness; (9) hours and wages; (10) training of workers; (11) the part played in the industry by mathematics; (12) the part played by drawing; (13) references to the industry found in literature; (14) the industry as depicted in art.

Industrial arts programs in the elementary school can be classified under three general plans. In small communities and in small elementary schools, industrial arts is taught by the classroom teacher who is responsible for the entire curriculum. The reason for this is economy. In some instances, industrial arts supervisory assistance is given by the industrial arts teacher in the upper grades. This, however, is the exception rather than the rule. The extent to which industrial arts is taught in such a situation depends on how well the teacher is prepared to carry on the work. Generally speaking, teacher preparation in industrial arts on the elementary level has lagged behind that on the secondary level. There are teacher training institutions in the country giving this problem special consideration. Some require a certain minimum number of hours of preparation for all elementary teachers. Where the elementary teacher is found to be adequately prepared in industrial arts, it is not difficult to see evidence of it in all phases of pupil activity. A miniature store, post office, fire station, bus, train, or main street calls for a wide range of industrial arts activities—tools, materials, and plans.

A study of birds might bring out the need for feeding stations and bird houses, necessitating considerable industrial arts experience. In instances where the elementary teacher is not adequately prepared, assistance has been asked of teacher training institutions to provide in-service training. Several universities now are engaged in such programs. A staff member, through extension courses, meets with elementary teachers of several small communities for evening classes for several weeks and college credit is granted. Classes meet in one of the elementary schools; the equipment and materials used by the teachers is the same as that used by the elementary pupils. In most instances, teachers are very enthusiastic and the results are very gratifying.

Where such teacher training service is not available there have been instances where local superintendents or principals with the assistance of the industrial arts teacher have conducted their own elementary industrial arts program. In some school systems, the industrial arts teacher has been given time in his schedule to work with the elementary teacher in developing her industrial arts activities. There are instances where Parent-Teacher Associations have raised funds so they could buy equipment for elementary industrial arts programs.

Small city and country schools find the itinerant industrial arts teacher a successful plan for elementary schools. This itinerant teacher assists the regular elementary teacher with industrial arts work through meetings where methods, projects, and other problems are discussed. An itinerant industrial arts teacher must have had adequate experience and training in this field.

Larger city systems may employ a third plan which calls for a full-time supervisor, a teacher with specialized training, and a special room and equipment. Cleveland, for example, has 80 elementary schools where industrial arts work is taught by teachers specially trained in the industrial arts department of Western Reserve University. These special teachers have 4th, 5th, and 6th grade pupils, but some types of industrial arts work is taught in kindergarten, and grades 1, 2, and 3. Usually the regular classroom teacher gives the work in these grades, however.

In Cleveland, the room where the industrial arts work is carried on resembles a street in a Swiss village. There is a shop or cottage for each activity such as woodcraft, decorative art, metalcraft, ceramics, painting and decorating and textile crafts. Additional crafts are bead craft, linoleum block printing, simple plastics, and leather craft.

Another feature of the Cleveland plan is that the work is augmented with a radio handcraft program, presented by Station WBOE, the pioneer school station in America. These broadcasts are given each week to 7,000 youngsters. While the broadcast is going on, each school shows slides (usually colored) to assist pupils in performing their work. The same slide is shown simultaneously in each of the 100 schools. The industrial arts work, or elementary handcraft as it is called in Cleveland, is closely correlated with art, science, arithmetic, English, and social studies.

This program is the result of an experiment that started in 1929 with one craft room in one elementary school. The teacher (Mr. Hamburger) is now a city supervisor of industrial arts.

In the Detroit schools the industrial arts supervisory staff assumes responsibility for the work beginning with the 5th grade level. The program is concerned with fundamental skills, attitudes, and habits common to many types of industrial arts work. According to the *Teaching Manual*, "the content of the shop work in the 5th and 6th grades is based on general industrial arts. It has been selected from several activities which include working with wood, metal, leather, and plastics."

There are other industrial arts activities that might have been included; however, experience has proven that training on this level should begin with tools most frequently used. A suggested list of instructional units include: (1) measure with a rule, (2) saw to a line, (3) trace a pattern, (4) drive and draw nails, (5) whittle with a knife, (6) apply paint, (7) apply wax.

Typical information topics are illustrated by the following: (1) plan a procedure, (2) grades and uses of sandpaper, (3) use of brads and nails, (4) lumber, (5) recreation and hobby units.

The Detroit plan calls for a pupil personnel organization such as a shop superintendent, foreman, tool man, safety engineer, record clerk. Each has specific responsibilities for each specific unit. Special consideration is given to safety education. Home work shops are encouraged by giving credit for work done at home. The use of salvage materials is stressed.

A great deal more work should be done in developing industrial arts programs in elementary schools. Adequate teacher preparation probably heads the list of current problems. Acquainting school administrators and other teachers with the importance of industrial arts is a continuing problem. The importance of good public relations should not be overlooked. There is much to be desired in program development on the local, state, and national level. This is a phase work that could well be given the best attention from all in the profession who are interested in developing industrial arts.

VOCATIONAL AGRICULTURE—

Its Place in the Secondary School

Programs for Youth and Adults Should Advance Simultaneously

AFTER a generation of trial and error vocational agriculture has not yet found its proper place and function in the high schools of the United States. "High schools" is used to mean the 4-year or 6-year institutions that go by that name, exclusive of the adult activities in vocational agriculture which are attached to them, sometimes by very slender threads.

One evidence is that approximately half of the high schools in rural areas do not teach vocational agriculture. The newness of the subject and the scarcity of teachers has contributed to this situation, but there still is some opposition to the entire idea in many communities on the part of pupils, teachers, administrators, school boards, and the public.

Another evidence is that in many communities which have vocational agriculture in the high school there is undue enthusiasm about its possibilities, particularly as compared to the possibilities of vocational education in agriculture for adults. They seem to believe they have solved the problem of agricultural education when they have provided four years of vocational agriculture in the high school. The limitations of high school agriculture (arising out of the immaturity of high school boys, their indecision, the limited time they have for practical farming, and their lack of control over their farming situation) do not receive serious enough consideration from those who think all vocational education for farming can be given in high school.

EDUCATORS have not thought very clearly about the place of vocational agriculture in the high school when they assume, as most have done, that the only kind of agriculture which should be taught to high school pupils is vocational agriculture. Vocational agriculture has almost driven non-vocational and semi-vocational agriculture from the schools. To be sure, much that is labeled "vocational agriculture" belongs in one of the other categories. If all high school pupils are considered, these groups, at least, can be identified: (1) Prospective farmers; (2) prospective farmers' wives; (3) prospective workers in agricultural occupations other than farming; (4) prospective owners of farm property who will not operate farms; (5) boys and girls whose future occupations in business, industry, and the professions will bring them constantly in touch with farm people and farming; (6) boys and girls living on farms who will not engage in agricultural occupations or have close connections with agriculture.

Prospective farmers may be divided into prospective commercial farmers, prospective part-time farmers, and prospective subsistence farmers, each of whom require different treatment.

Add to the needs of these groups the needs of high school pupils who, as citizens, will make the policies which govern agriculture and, as consumers, will buy and use the products of agriculture, and we see that teaching vocational agriculture to a few farmers' sons does not exhaust the possibilities of agriculture as a high school subject.

Perhaps the greatest aid to seeing high school vocational agriculture in proper perspective is to look at the total life of a farmer and to consider at what times in his life he will need vocational education in agriculture, want it, and be able to profit by it.

CERTAINLY the needs of out-of-school young farmers are more insistent than those of high school boys and their ability to profit from instruction is greater. The 40-year-old who is managing a farm is often all but submerged by his problems. He needs and will use help, and when he uses it he applies new technologies to farms of commercial size. The hope for widespread and rapid changes in agriculture lies mainly with those who are operating farms. The 60-year-old, who has good prospects for a long life and may farm for 10 or 20 years more, has his needs for education. He too must "learn or perish."

To spend all resources for agricultural education upon children who have not reached the threshold of full-time agricultural employment is like squandering one's inheritance as soon as it is received. Funds for agricultural education always have been limited and probably always will be; they should be spread over the limetime of the individual. The notion that children can learn in childhood to take care of themselves ever after without educational service has been thoroughly exploded. Once it was thought this could be done for farmers in the first eight grades or less; now the need for universal secondary education is conceded. There is little more reason for believing that education is completed upon graduation from high school than there was for believing that it was done at the end of the eighth grade. A good case could be made for educating adults and letting the children go if it were necessary to choose between the two groups.

THE solution is not to drop vocational agriculture from the high school curriculum. The greatest progress is attained when children and adults go forward together. Children's ideas and practices do not change very much unless those of adults change. It may be necessary in some situations to deemphasize high school vocational agriculture to obtain the teacher-time and funds required to expand in the adult field. This may be no great loss. Vocational agriculture should have matured beyond the old routine of "high school boys first, young farmers second, older adults last," in alloting time and funds. An adult's life may be worth as much to him and to society as a child's

H. M. HAMLIN
Professor of Agricultural Education
University of Illinois

life is worth to him and to society. If the schools can do anything to make the lives of either children or adults more fruitful and satisfying they should not fail to do it. It is easy to become involved in a "hen and egg" argument but it can never safely be said which should come first, adult or childhood education. The two should proceed together.

ONE of the principal reasons why high school vocational agriculture is not functioning as it should is that inadequate attention has been given to the occupational and educational guidance of high school boys. The Smith-Hughes Act assumed that anyone entering a class in vocational agriculture would have his mind completely made up to become a farmer. This is too much to expect of the average high school boy. The opportunities to enter farming vary widely by communities; many who might like to be commercial farmers cannot be. Also, country-wide, there are about as many occupational opportunities in agriculture outside of farming as there are in farming. Many high school boys now studying to be farmers may well be diverted into these occupations. Granted that there are many boys now in high school classes in vocational agriculture who are not surely headed for farming, it also must be conceded that there are many who have serious intentions to farm and who have good opportunities awaiting them. Thus there is definitely a vocational group among high school students and they should be provided for. Educators seem to have discarded, so far as farming is concerned, the idea that because high school boys generally are uncertain about their future vocations all vocational education should be postponed until after high school. Just as the best musicians start their musical education at an early age, so the best farmers usually are those who appear to have been born predestined to farm and who have learned about farming from infancy on.

VOCATIONAL agriculture is not well adapted to some high schools because it is treated as a separate and largely unrelated subject, when it is one of the subjects most closely related to others—an integrating and applying subject like engineering, drawing upon the natural sciences, the social sciences, the industrial arts, and mathematics; employing English, and public speaking; and capable of a helpful symbiosis with home economics and business education. A good teacher of agriculture can do much to make these other subjects meaningful and interesting to his pupils. The high school primarily is an institution for general education; it will continue to be, and it should be that kind of institution. There is a place for vocational education in it, but even the vocational subjects may take substantial contributions to general education and they are more appreciated when they do. If agriculture is taught as a vocational subject with Federal aid, it should be taught to those whom Federal aid is supposed to benefit: "persons over 14 years of age who have entered upon or who are preparing to enter upon work of the farm or of the farm home."* If vocational agriculture is to be taught in the high school as a vocational subject other classes in agriculture should be provided into which those can be diverted whose vocational intentions are dubious or are clearly directed away from farming.

*Smith-Hughes Act, 1917, Section 10.

If boys admitted to vocational agriculture classes in the high school are screened well, and if a definitely vocational program is provided for them with proper emphasis on supervised farming, high school classes in this subject will be small, and most enrollees in vocational agriculture will be persons out of school. Usually there are about 10 prospective out-of-school students in vocational agriculture for every one high school pupil who should be studying the subject. Schools have not been as successful in reaching a high percentage of available adults as they have been in reaching a high percentage of high schools boys, of course.

BECAUSE most communities employ only one teacher of vocational agriculture, and because he should spend at least half of his time with adults, he will not be as closely identified with the high school as teachers of other subjects. This seems to be a necessary evil. Teachers of vocational agriculture cannot forego their largest clientele, the adults, to spend full time at the high school teaching non-vocational subjects, directing extra-curricular activities, and doing miscellaneous chores. The situation will be relieved a great deal if and when other teachers also engage in adult education and the schools are made community schools serving the entire public without discrimination, rather than children alone.

Most of the time of teachers of agriculture could be used fruitfully with high school pupils if classes in non-vocational agriculture and semi-vocational agriculture were provided for pupils not adapted to vocational agriculture. These classes may require a different kind of teacher. To teach all kinds of agriculture needed by high school pupils and at the same time to serve adults adequately usually would require at least two teachers of agriculture. There are some teachers of vocational agriculture who could adapt themselves to teaching non-vocational agriculture. They might do better in teaching non-vocational agriculture than they do in teaching the non-agricultural subjects frequently required of them.

PERHAPS the most important statement that could be made on the place of vocational agriculture in the secondary school would be a warning against assuming that vocational agriculture has found its place in the high school and that present arrangements for vocational agriculture are so well tested and so successful that they should endure forever. If this assumption is made, vocational agriculture never will find its place in the high school.

National Grange Supports Vocational Education

WHEREAS, we feel that Federal aid for instruction in agriculture and homemaking, as provided in the Smith-Hughes Act, has been administered with due regard to state and local control and,

WHEREAS, vocational agriculture and homemaking departments have rendered outstanding educational services to farm youth, serving all farm homes alike,

THEREFORE, Be it resolved that we favor legislation providing ample Federal and state funds to make available instruction in agriculture and homemaking for those students in farming communities who desire it. *Resolution passed by The National Grange.*

Individual supervision on the grading of dark fired tobacco

An Ideal Teaching Situation

Institutional On-Farm Training Provided for Tennessee Veterans

G. E. FREEMAN
State Director of Vocational Education
Tennessee

NOT since the beginning of vocational agriculture has such an ideal teaching situation presented itself as Institutional On-Farm Training. Vocational agriculture teachers and assistant teachers have used this medium effectively to help returning veterans establish themselves in the business of farming.

In Tennessee the program is providing agricultural training for all veterans desiring to pursue such courses under the national G.I. Bill of Rights. An agricultural program has been developed whereby veterans who plan to farm may establish themselves in the business of farming. Those connected with this program endeavor to assist the veteran in exploring and determining his own possibilities and opportunities in the farming business. If, after a thorough trial, it is found that farming is not satisfactory or profitable for an individual, those responsible for the program counsel with him and assist him in recognizing the desirability or changing his training objective.

There are four additional factors in the program: Determining courses of study, instructors, supervision, and evaluation of the program.

Both individual and group courses of study have been worked out.

Individual—A course of study for on-farm teaching and supervision is prepared and executed for each individual trainee with consideration for (1) the conditions of the farm where the trainee is receiving his supervised farming experience portion of the course; (2) what the trainee has—land, livestock, buildings, power and equipment, or capital to invest for that purpose; (3) the type of farming in which the trainee is engaged or preparing to enter; (4) the needs of the trainee for proficiency in skills and managerial decisions in planning, producing, marketing, conservation of resources, feed and food, farm mechanics, farm financing, farm management, and keeping farm and home accounts.

Group—A course of study for systematic, organized group instruction including farm mechanics, farm production, utilization, and marketing, is based on and developed from a survey and summary of farm plans for each member of the class. This summary is made by farm enterprises to determine the relative importance to the class of each enterprise. A further study is made to determine the needs for instruction based on present practices, need for approved practices, and past experience and training of the student. The group instruction course in addition covers such jobs in farm management as meet the needs of the trainee for proficiency in planning, conservation of resources and food, farm financing, and keeping farm and home accounts.

Group instruction in farm mechanics and engineering is included, based on the needs of the individual as determined by his type of farming, production and operating requirements of equipment, and permanent structures. The course of study then is prepared in the form of jobs to be taught and is entered on the Tennessee Vocational Agriculture Teachers' instruction calendar in seasonal sequence.

Instructors for veterans are known as assistant agriculture teachers. They are agricultural college graduates (or have the equivalent in training and experience). Each assistant teacher works with and under the supervision of the regular vocational agricultural teacher in the community where he serves. He is selected and employed by the county board of education, subject to the approval of the State Board for Vocational Education. When employed, he is responsible to the superintendent of schools and county board and has the same responsibilities as the other teachers in the county.

The vocational agriculture teacher holds regular meetings with the assistant teachers to make lesson

(Continued on page 33)

Apprentice Training and Study Guides

TEXTBOOKS ALONE INSUFFICIENT FOR INSTRUCTORS OF SKILLED TRADES

CLAUDE H. EWING
Supervisor of Vocational Curriculum
Chicago Public Schools

WITH the beginning of an apprentice program, the instructor often expects the student group to be heterogeneous in background, and begins instruction fully expecting that some means of selectivity eventually will result in a fairly uniform type of student. In the building trades, particularly, it might be upsetting to younger teachers to learn that this is not the case. After 25 years of fairly close observation, the writer knows that incoming groups of apprentices in approximately 30 occupations lack uniformity.

A lack of uniform educational background is of less significance in teaching manual skills, since the background of most apprentices is void of these skills and thus all start at the beginning. The school work of apprentice training is more concerned with related instruction. Most trades require mathematics, science, and drafting or blueprint reading. In these, the skills attained in general education have value. It is in these fields that the apprentice teacher has to recognize the particular abilities and needs of each apprentice. This situation becomes more complicated when a group or class is composed of more than one trade group. There is only one answer to such a problem: organized instructional material which allows individual progression.

The second outstanding instructional element evident in an apprentice teaching situation is that the needed information in mathematics, science, and other subjects is almost definite. That is, through a study of trade demands the actual needs of the tradesman are evident to the apprentice as well as to the instructor. With such definite goals there is little or no justification for the instruction to be other than that needed to carry the apprentice most directly to journeymanship. Here again there is need for individual progression and directional individual progression.

In apprenticeship the third demand is that training be completed within a time limitation. Except in a few situations, time is the factor given most consideration. Salary adjustments are made on a basis of time spent in the trade. When examinations are held to determine accomplishments during a certain period of apprenticeship, the examination is usually based upon the subject matter for which the school is responsible. The need for instructional materials of fairly short units is imperative for such an accomplishment. This is especially true when a week intervenes, as is the case in apprentice school attendance. Short, concise units which permit the apprentice to check himself, create stimulation in accomplishment. Such material also makes it possible for the instructor or apprentice committee to check the apprentice's progress.

The fourth point is the necessity for connecting the elements which compose apprentice instructional material. Since the apprentice attends school one day per week, instructional material planned to permit accomplishment each class session tends to be disjointed. This requires a procedure for review of previously accomplished subjects; connection with an extension of the subject, or a newly introduced phase of the work; a projection and at the same time completeness of the unit providing stimulation of accomplishment.

Although some work experience on the job between school days makes school work meaningful, many of the trade demands presenting excellent material for school instruction are not within the manual skill abilities of the new apprentice. However, as the apprentice grows in manual skill and knowledge he has opportunities for the performance of jobs for which he received instruction early in the school program. Contact on the job brings a realization of the necessity for reviewing — individually — the instructional material pertaining to his new manual experience. Provision for this must be considered in the teaching program.

How can the apprentice know that he is really accomplishing the work assigned in school? The answer is: instructional material must be prepared so it can be checked, objectively, by the apprentice himself. The teacher must realize that the apprentice should have available at all times means of checking his own progress in terms of accomplishments.

This presentation of the job of teaching related technical subjects to apprentices no doubt appals the new teacher. During the past decade, numerous excellent textbooks have been published. There are few trades or occupations for which related instructional materials are not available. However, when measured against the job to be done, the textbook alone does not suffice. Assuming that suitable textbooks are available, there is need for supplementary materials also.

Reviewing the situation, there is evident need for instructional materials which: Allow for individual progression; give directional individual progression; meet time limitations; permit self-checking; provide for others to check an individual's progress; present, in each new unit, review of previously accomplished materials; and make available comprehensive objective examinations for materials covered.

Teachers for trade subjects are available only from industry. Few have pre-service training. The special abilities required for organization of instructional materials to supplement text materials and the time required for this special job as well cannot be expected from every classroom teacher. This is especially true where a number of trades are taught by one instructor, even though he may be an engineering graduate.

If the situation has been analyzed correctly, it is evident that the vocational training program, especially apprentice training, can be made more successful through instructional materials supplementing the textbooks now being published so abundantly. The special needs presented here point specifically to the use of materials referred to as "study guides." The

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The In-Service teachers who brought schools up to date at the Chrysler Corporation 1947 summer session

Teachers of Industrial Education Get Work Experience

G. HAROLD SILVIUS
Chairman, Department of Industrial Education
Wayne University, Detroit, Mich.

SINCE manipulative work in industrial arts and vocational industrial education consists of hand and machine tool operations as performed by skilled craftsmen, it is obviously desirable that teachers in these areas have industrial experience. This is substantiated by the findings obtained from a recent study of qualifications and activities of outstanding industrial arts teachers.*

Of the 750 teachers reporting, 65 per cent had more than two years of industrial experience; 56.5 per cent had more than three years. Only 13.7 per cent had less than 10 months. The accompanying table shows the amount of industrial experience, number of teachers, and percentage.**

INDUSTRIAL EXPERIENCE
Outstanding Industrial Arts Teachers

Number of Months	*Number of Teachers*	*Per Cent*
5 or less	47	6.3
6-10	56	7.4
11-15	44	5.9
16-20	50	6.7
21-25	63	8.4
26-30	36	4.8
31-35	27	3.6
36-40	28	3.7
41 or more	396	52.8
Not specified	3	0.4

Accepting the fact that teachers should have industrial experience whether they teach industrial arts or vocational industrial education, it would seem logical that necessary provisions be made by institutions preparing teachers for these fields. After all, young people entering the teaching profession are expected to secure work experience as well as college degrees.

Recognizing this need, Wayne University has established three different programs: A cooperative teacher-education program with the Chrysler Corporation, a college program for employed students, and a plan for providing work experience related to teaching assignments for those who have had teaching experience. Each of the three programs fulfills a specific need.

Arrangements with the Chrysler Corporation make it possible for a student to get work experience, earn sufficient funds to cover living expenses, and complete his college work in four years. Under this plan a student is assigned to one of three groups:

Group A—Work during first semester each year with a part-time University program September to February, and attend Wayne University as a full-time student during the second semester and summer session.

Group B—Work during second semester each year with a part-time program, February to June, and attend the University as a full-time student during the first semester and summer session.

Group C—Work during the summer session while attending the University. This group is for in-service teachers in industrial education who want to bring their skills up to date and to study modern industrial processes.

Groups A and B are for undergraduates primarily, but graduate students may be accepted if they can

* Silvius, G. Harold: "Instructional Units for Professional Courses in Undergraduate Industrial Arts Teacher Education" (State College: Pennsylvania State College, 1946).
**Ibid., pp. 51-52.

benefit from this type of work experience. Students may work either on the day shift from 7:30 a.m. until 4:00 p.m., or from 4:00 p.m. until 12:30 on the afternoon shift. During the semesters that students work, they may also enroll for eight to 10 semester hours credit, four hours of which are for supervised work experience. The remaining four to six hours are scheduled at the University on Saturday, or before or after working hours.

During semesters at Chrysler's for the first two years, Groups A and B work on all of the various machine tools in the apprentice school and attend theory classes on company time to study related information. During the last two years students are rotated through several departments of the corporation such as heat treat, powdered metalurgy, foundry, and time study.

The pay is at the training rate for cooperative students. Veterans, eligible for G.I. benefits, draw subsistence up to the maximum amount and have fees and tuition paid during semesters employed.

The following table shows how a student just graduating from high school could earn 124 semester hours credit in four years. He would have a six-week vacation each year since the plan calls for only six credits during the summer session. It is possible, however, to earn as many as 12 semester hours credit during a 12-week summer session. By this plan, students need earn only eight credits during the semesters while they are employed.

FOUR YEAR PLAN

	Semesters Full-time Student	Semester Employed	Summer Session	Total Hours
Graduate from High School			6	6
1st Year	16	8	6	36
2nd Year	16	8	6	66
3rd Year	16	8	6	96
4th Year	16	8	4	124

Wayne University offers courses in the late afternoon and evening so those employed in skilled trades can take college work as part-time students. Many of these journeymen have the necessary interests and aptitudes to become successful teachers; they are high school graduates, have served an apprenticeship, are excellent students, and bring a maturity to their college work that is encouraging to all who work with them. Some of Detroit's finest teachers began their college work as part-time students.

It is possible to complete a 4-year curriculum in six years by taking eight hours of college work in a regular semester and four hours in summer session. A large number of students employed full-time now successfully carry as many as eight hours of college work during a semester.

SIX-YEAR PART-TIME COOPERATIVE PLAN

	Semester I	Semester II	Summer Session	Total Hours
Graduate from High School			4	4
1st Year	8	8	4	24
2nd Year	8	8	4	44
3rd Year	8	8	4	64
4th Year	8	8	4	84
5th Year	8	8	4	104
6th Year	8	8	4	124

If the student follows the part-time plan for four years and then spends two semesters as a full-time student, he can complete work for the bachelor's degree in five years.

THE FIVE-YEAR PLAN

	Semester I	Semester II	Summer Session	Total Hours
Graduate from High School			4	4
1st Year	8	8	4	24
2nd Year	8	8	4	44
3rd Year	8	8	4	64
4th Year	8	8	4	84
5th Year	18*	18*	4	124

*Full-time Student

University classes are scheduled to fit into the day of the part-time student.

	Working Hours	University Classes
Plan I	7:00 a.m. to 7:00 p.m.	4:30 p.m. to 8:45 p.m.
Plan II	3:00 p.m. to 11:00 p.m.	9:00 a.m. to 1:00 p.m.

There are a number of advantages in the part-time plan. First, the student can secure a college education while earning enough to meet expenses; second, it provides opportunity for the student to get industrial experience so essential for industrial education teachers; third, provision can be made for the student to secure necessary trade experience required for a vocational teachers certificate; fourth, the industrial experience may qualify the student to complete a few industrial education courses by examination; and fifth, the program provides a type of college education qualifying the student for many jobs in industry as well as those in education.

To supplement other cooperative programs, Wayne University has made provisions for selected work experience, so that teachers may get work experience related to their teaching assignments. Going back to industry probably is the most desirable way for a teacher to keep up to date. A teacher of drafting, for example, can spend the summer months in a drafting room of one of Detroit's large industries and, at the same time, complete six hours of graduate or undergraduate work. His pay would cover his summer expenses. Jobs in the following classifications were available during the past summer: Airplane construction, bench metal work, chemical laboratory, drafting, inspection and testing, welding, machine tool operation, metalurgy and heat treatment, patternmaking, plastics, sheet metal and metal forming.

Because most work schedules are on the afternoon shift from 3:00 until 11:00 p.m., University courses are scheduled in the forenoon. A few people, however, work on the day shift and enroll in evening courses. The pay for the work in industry is at the prevailing rate for the particular job. These industrial fellowships start upon arrival in Detroit and continue until the teacher is required to leave for his teaching assignment.

For convenience, programs are thought of as groups or plans, but each student's schedule is individual and built around his needs and interests. In each case, the University's objective is to prepare the student to be a teacher who will be a credit to the teaching profession.

Wayne University has had requests from colleges in various parts of the country for information concerning this program.

Supervised Farming Is Fundamental

Effective Instruction in Vocational Agriculture Prepares for Farming

VOCATIONAL education in agriculture is effective to the extent that those enrolled develop abilities needed for success in farming and farm living. Supervised farming programs are fundamental to instruction which leads to these kinds of outcomes.

Supervised farming programs consist of activities in farming conducted by persons enrolled in vocational agriculture, for which organized instruction and supervision are provided by teachers of vocational agriculture. One of the most important values of these kinds of activities is the learning-by-doing approach thus provided. Instruction is effective because it can be based on real life problems and because the learning process is carried through the doing stages. Other important values of these programs follow:

1. They provide interest and motivation, since the learner engages in activities in which he is vitally concerned. He can be stimulated to set challenging goals of accomplishment for these activities and his instruction can be focused upon problems involved in reaching these goals.

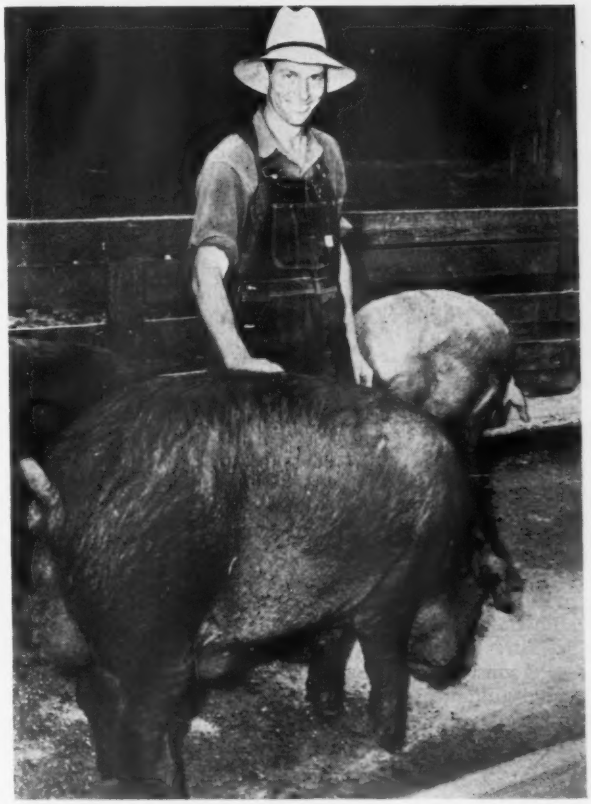
2. The accomplishments provide an excellent basis for the learner to evaluate his own progress and growth, and for the teacher to determine the effectiveness of his instruction. The student shows what he can do and what he is willing to do as an outgrowth of the instruction he receives.

3. They contribute to the improvement of farming and farm living. Since these activities for the most part are conducted on the farm where the student lives, the improved procedures demonstrated frequently lead to improvements on a broader scale that affect the economic and living conditions on that farm and nearby farms.

4. They aid boys and young farmers in becoming established in farming; and for persons already established, they aid in improving efficiency in the occupation. Boys in high school and young farmers acquire assets for starting in farming, such as foundation animals for flocks and herds, equipment, and money. Adult farmers, through improved efficiency and increased income, may be aided in raising their farming status by improved rental arrangements or by progress toward ownership.

The late R. W. Stimson of Massachusetts is credited with being the father of supervised farming; in 1908 he originated the "home project plan" for teaching vocational agriculture. Present day concepts of what constitutes a broad program of supervised farming and how these programs may be used as a basis for effective instruction have grown from these beginnings. While supervised farming may differ somewhat for the in-school and out-of-school groups enrolled in vocational agriculture, the following kinds of activities usually are included in these programs:

1. Production or Ownership Projects—These are business undertakings for profit in which the participant has complete or part ownership. These usually consist of one or more farm enterprises such as swine, corn, or cotton in which the person seeks to improve his efficiency and thereby secure increased profits.



This Minnesota adult farmer has improved his swine project

2. Improvement Projects—These are undertakings of considerable scope in which the person seeks to improve the real estate value of the farm, the efficiency of the farm business, or the living conditions of the farm family. Improving farm buildings, establishing a soil conservation program, planning and adopting an improved program for the farm business, and adding conveniences and improving the surroundings of the home are examples. Other examples of improvement projects for boys in high school and persons in younger-farmer classes include improvement of the home farm dairy herd, improvement of the poultry flock, development of a live-at-home program of food production for the family, development of a home-farm shop, and many others. In these undertakings, the youth receives no direct income for his efforts but he does receive valuable training while making important contributions to the well being of the family. Furthermore, in most of them he works with other members of the family in bringing about the desired improvements.

3. Supplementary Farm Jobs—These consist of undertakings outside of the production and improvement projects by means of which the student gains addition-

GEORGE P. DEYOE
Professor of Agricultural Education
University of Illinois

al experiences or skills and frequently improves the efficiency of the home farm in some degree. He may learn how to cull inferior layers from the home poultry flock, he may plan an improved ration and take charge of feeding the home dairy herd, he may control mange on the hogs in the home farm herd, he may establish sodded waterways or undertake similar jobs which are not a normal part of productive and improvement projects already included in his program.

4. Placement for Farm Experience—This basically is a supervised program of farm work. An individual secures employment on a farm to learn farming by the "apprenticeship" route under an experienced and skilled farm operator. This type of supervised farming program is frequently undertaken by boys and young men who have had only limited farm experiences and are unable to provide adequate facilities for supervised farming activities of the kinds previously described.

5. Group Projects—These provide a valuable type of supervised farming activity. They may consist of productive undertakings on a group basis such as conducting brooder projects, or raising winter wheat or some other crop by a class or the entire FFA chapter. In some cases, the departments of vocational agriculture operate school farms. Other types of group undertakings contribute to improved farming and farm living such as a community weed control program or the sponsorship of a school-community fair. Still others consist of cooperative activities which represent group aspects of the supervised farming programs of individual students. Examples include the group purchase of sires, feeds, or fertilizers for use by individuals. Group activities of these kinds are valuable but they should supplement rather than replace activities in individual programs.

Persons enrolled in vocational agriculture are provided guidance and other assistance in selecting broad programs of the kinds described. Instruction then is provided for carrying out these programs. More and more, instructors are focusing their group and individual instruction on the development of these programs. Persons are given instruction which helps them determine their current status or level of efficiency in these activities. For example, in swine they utilize such measures of efficiency as cost per hundred pounds of pork, pounds of feed per hundred pounds of pork, number of pigs raised per litter, weight of litter at 56 days, and age of pigs at the desired market weight, all of which are closely associated with profits in swine production. After each person in the group decides on his present level of efficiency, if he already is engaging in swine production he is encouraged to set goals for himself in terms of how efficient he hopes to become. Members of the group are them in a position to analyze the problems involved in reaching this status and through the study of these problems determine the practices necessary for securing desired results. Further instruction is provided to develop the abilities for carrying out these practices and in applying them to farming programs. In this manner, supervised farming programs become the foundation for effective instruction for in-school students of vocational agriculture and for out-of-school persons enrolled in young-farmer and adult-farmer classes.

Michigan farm youth prunes home orchard trees as a farm job

One of the most recent developments in vocational agriculture is the provision of on-the-farm training for veterans of World War II. At the present time more than 200,000 veterans are enrolled for instruction in agriculture and receive the benefits of the G.I. Bill. Most of them are engaged in farming on a self-employed basis and their supervised farming programs consist of the phases of farming which they seek to improve as the result of the instruction they receive. Thus their farming programs may be as broad as the total farm business in which they engage. Other veterans are on an employed basis and have programs based upon the kinds of farming responsibilities they are given by their employers. Employers are classed as "farmer-trainers" and are responsible along with regular teachers for assisting the veteran to learn better farming methods and make progress toward establishment in farming. Each veteran who is enrolled is assisted to plan and record progress in a detailed training program which includes group instruction, individual instruction on the farm, and supervised farming activities which he actually carries out on the farm. From experience with these programs for veterans, persons in agricultural education should gain a broadened concept of possibilities in supervised farming for out-of-school persons who receive instruction in vocational agriculture.

Thus, with in-school and out-of-school groups enrolled in vocational agriculture, supervised farming is basic to providing a vital kind of instruction in the vocation of farming. In fact, this practical approach to learning is basic if education in agriculture is truly vocational.

Voluntary Food Conservation Program

The Cabinet Food Committee, consisting of Secretary of Agriculture Anderson, Secretary of State Marshall, and Secretary of Commerce Harriman, has taken over the reins of the food conservation program. The new Voluntary Food Conservation Program is directed by James A. Stillwell assisted by Assistant Secretary of Agriculture Charles A. Brannan and George Bijur, special assistant to the Secretary of Commerce.

State and local committees developed by the Citizens Food Committee are asked to intensify their efforts to focus community attention on the objective of the program. Specific details, as worked out, will be announced.

A statement issued by the Cabinet Food Committee made it clear that a major aim of the new program is to help roll back the spiralling wave of inflation by fighting high food prices: "If each family does its part in faithfully living up to voluntary food conservation, runaway prices can be avoided," it says.

Long Range Projects in D.E.

Tulsa, Oklahoma, Has Program Which Stimulates Student Participation

LOUCILLAH KIRKPATRICK
Coordinator, Distributive Education
Central High School, Tulsa, Oklahoma

TULSA, Oklahoma, Central High school distributive education students are proving the workability of at least four long-range projects in their related classes. Because the distributive student is a "do-er" discussions, projects, and assignments which give him an opportunity for research connected with his individual job stimulate interest which is sustained over a gratifyingly long period.

The first project, scheduled for the beginning of each school year, is rotation of responsibility for merchandise displays which are set up in the classroom. These displays are planned and executed by the student who borrows the merchandise from his sponsoring store. The trainee is responsible for this merchandise and all equipment used in its display. He inventories it before bringing it to school and again when he returns it. The displays give the trainee an opportunity to express himself in the application of color harmonies, related style items, balance, and center of interest, all of which are discussed with the coordinator. Oral reports about the merchandise occasionally are given by the student.

Typical displays are lingerie, ladies' purses, needlework patterns, delivery and gift packages showing their special wrapping, junior clothes, and canned goods. A sample food-service tray for airplane passengers brought to class by a student who works for the local airport restaurant which services four airlines, was an unusual display.

A class and club project is the quarterly publication of *DEC News*, published in mimeographed form for the distributive education students, their sponsors, and teachers. Items for each issue are suggested by the class as a whole, and selected by individuals for writing. These stories are graded for English credit. *News* staff members are selected from the club members. Types of articles (other than the editorial which relates to distributive education) are stories of club and classroom activities, interviews with successful distributive education alumni, a guest-column for articles by sponsors, book reviews, a personal column, and a regularly revised list of former D.E. students now in retail occupations.

The third project is the demonstration sale. This takes place at the close of the units of study on sales transaction and importance of merchandise knowledge. It is planned to incorporate the theories of each unit and is required of all seniors in the program. Each student brings merchandise for his department, selects a customer from among the class group, and presents his model sale. The sale is submitted in written form to the coordinator in advance and discussed with her. Rehearsals previous to the presentation are permissable.

The demonstrating student is encouraged to accept graciously the constructive criticism of classmates. Student rating of the seller is recorded on a check sheet covering the following points: approach, questions, tone of voice, posture, facial expression, vocabulary, knowledge of merchandise and proper application of this knowledge, suggestions for additional sales, and the leave-taking.

Demonstration sales not only mean active participation in class activities for all students, but are a most satisfactory training device for developing alertness to good salesmanship. As refreshing entertainment, they receive undivided attention and interest and occasional applause.

The fourth and newest of the long range projects is the individual student's own scrap book. This book may contain every procurable item of special interest to distributive education whether its source is inside or outside the classroom. Its contents include pictures of stores of early days, cartoons of selling situations, a history of the trainee's sponsoring store, its regulations and policies, department directory and organization chart, etc. Samples of various blank forms used in selling are shown, with descriptions of the use of each.

These projects have provided a mutual interest for the group as a whole and for students' trainers at the stores. Each student brings his individual interest and experience to single projects, and finds an opportunity to express his personality while increasing his self-confidence

Washington State Produces Restaurant Training Film

DISTRIBUTIVE educators have been handicapped by inability to get good restaurant training films. In Washington state, a group prepared a script and secured the assistance of a number of organizations to help with the film.

The Washington State Restaurant Association paid the cost of the film—about $600—and Everett Junior College photography department took the pictures. This school photography department is considered one of the best in the United States and their assistance was most valuable.

Suggestions also were received from the Washington State Health Department, the Seattle Waitresses Union, and many other groups. Walter Clark, past president of the National Restaurant Association, put one of his Seattle restaurants at the disposal of the distributive education department and his employees assisted as models and as technical supervisors. Mr. Clark also took part in the film, which is in color and sound.

The completed project demonstrates effectively major points in restaurant training and is a valuable teaching aid.

Recreation—

An Industrial Arts Function

Young people evidence interest in industrial arts activities

Wholesome Recreation for All Possible Through This Program

THE complexity of society today is such that the formal procedures of a six-hour school day are but a small part of a person's life. It might be called the working day.

Industrial arts has a master function in serving all of the people with all of the industrial arts necessary to make a wholesome recreation.

This, all may agree, is a fine concept. But what is done about it? Some teachers will have no part in an activity which is not a classroom activity; others feel a responsibility to society. Too much praise cannot be given the public-spirited teachers of industrial arts who give hours to counseling, teaching, and testing Boy Scouts for the various craft and skill merit badges or who operate successfully skill and craft projects in community houses, boys' clubs, and recreational centers.

The first function of industrial arts in a recreational program is that of a central agency. The home workshop is among the most glorified of all industrial arts recreational activities. A model home workshop should be set up and used in the industrial arts school shop as a precept for those attending junior and senior high school. Boys and girls will see this example and work toward establishing one for themselves at home. This does not mean collecting equipment to be set up as a salesroom display, but rather, making the project a functional factor within the program of study. The school should foster, advise, sponsor, and promote home projects in the crafts the same as the FFA does in home agricultural projects. This is not a new proposal; it is a reminder that here is an opportunity for industrial arts to become functional in the field of recreation.

LYNNE C. MONROE
Associate Professor of Industrial Education
Santa Barbara College, California

The second function of industrial arts in recreation is for out-of-school hours of children. Many schools have assigned teachers to playground activities to police the grounds. If a pupil conducts himself well he has little or no contact with the teacher. If he has caused some difficulty and correction was necessary, then an adverse situation was established. The promotion of recreation during this period was naturally negative. It is suggested that facilities in the future be established so positive action may be motivated through establishment of such industrial arts activities as lend themselves to recreation. The crafts are particularly well suited for short periods of time.

Many schools have endured problems during the noon hour when students shifted for themselves. Some have attempted to utilize the time by furnishing motion pictures. In other schools students have engaged in competitive games. These plans have been successful to a degree. It is proposed that industrial arts teachers work out a program so students will have an opportunity for industrial arts activities at this time. At the outset only one activity, well presented, should be attempted. As soon as this activity is well under way another should be added. These additions should not be made until supervision is available.

Similar activities may be carried on after school. These programs will be successful only if, and when, they are carefully thought out. Plans should be submitted to the school administration and should have the blessing necessary to carry out the program as a recreation and not as a school instructional subject.

The third function of industrial arts is for children during the summer months. Our forefathers established the tradition of turning children out of school in the summer time to pick potato bugs, pull weeds, and assist with the general farm work. Children today are having little success picking potato bugs off the pavements. In fact, they are losing their lives through

the hazard of the modern automobile when they play in the streets.

It was the good fortune of the writer to operate a 6-week summer vacation school a few years ago. The board of education leased an elementary school building (for $1.00) and a program of industrial arts was established at the age level of the children who were to attend, in this case, six to 13 years.

The morning session ran from 9:00 a.m. to 12 noon, the afternoon session from 1:00 to 4:00 p.m. Forty-five minute periods were alternated between shop and playground activities. Toy making; keene cement work; weaving of raffia, reed, and twine; whittling; model making of boats, airplanes, and trains; preparation of Scout merit badges, and similar activities were carried on in the shop. The playground period was conducted by the industrial arts teacher who enjoyed the period thoroughly.

A contract with a local swimming pool provided special rates two days a week; an agreement with an equestrian school enabled the boys to learn horseback riding at a nominal sum. On these days one and one-half hours of shop activity was the schedule.

In launching such a project, if there are not enough students for classes both morning and afternoon, one or the other can be selected. The experience of those who have tried this idea shows that many students come the first year, more the second and third, and so on. In this instance, it was necessary to open the opportunity to girls in home economics and children of kindergarten level in the mornings only. Then the capacity of the school was doubled by hiring a playground instructor and alternating groups of 20 between playground and shop. The same was true for the girls. One of the grade school teachers was engaged to tutor those who were in need of help with the three "R's" also.

This entire recreational program was centered about industrial arts. Any industrial arts teacher can originate a similar program, with either one or two periods a day.

Some outstanding benefits are the removal of children from the streets; utilization of school buildings normally idle; keeping children in controlled activities; no interruption of family vacations as the child may come and go as the parents wish; development of skill and coordination in the child; and in many cases relieving mothers of a responsibility they are not accustomed to handling after children begin school.

Expenses were handled by a fee of $6.50. Between 50¢ and $1.00 was used for materials, and the balance applied to the instructor's salary. Under present conditions $10 would be a reasonable fee.

The same general idea of summer school may be carried on for junior and senior high school youth. In fact, it has been tried out successfully. High school boys and girls, however, would rather work in the shops than have a playground period.

The fourth function of industrial arts is for social agencies sponsoring a recreation activity program. Agencies such as the YMCA, YMHA, YWCA, community center, boys' clubs, juvenile halls, and others, provide an excellent opportunity for industrial arts to be the core of a recreational activity. Most of these agencies are more than willing to invest money in equipment if they have the advice and help of someone who knows. This person, for the most part, will be the industrial arts teacher.

If he will lend his advice and do it graciously he will find many of his former students will do the leg and foot work, because they have a philanthropic spirit and because they want to continue their association with him. He furnishes the leadership and they assist him. These organizations usually have men trained and skilled in the art of handling young men and boys. Much assistance will be given by the professional boys worker for the furtherance of an activity program.

There is an opportunity here for future teachers of industrial arts to learn what can be done in these agencies. If teacher training agencies can assign cadet teachers to any one of the suggested agencies and supervise the work, both agency and cadet will profit and the industrial arts program will be advanced.

This function should not be taken lightly. It should be highly organized. Mrs. Dorothy M. Schnell recently conducted a study of "Characteristics of Adolescence"* which included topics of interest to early adolescent youth, 13 to 15 years of age, and middle adolescent youth, 16 to 18 years. When the youth checked a topic of interest to the extent of more than 40 per cent of those studied, it was reported. Both boys and girls in the early adolescent group indicated a high interest in leisure time activities as well as vocational choice and training. In the case of boys, they indicated a high interest in science and mechanics. In the middle adolescent group, boys continued their interest in science and mechanics while girls indicated continued interest in leisure time activities. Both indicated interest in their vocational choice.

With these interests so clearly indicated and the field of industrial arts education having so much to offer, there is a challenge to meet youth's needs.

The fifth function of industrial arts is in adult recreational activities. People recapitulate their lives as they grow older, thinking of what they have missed and what they would like to do. The man or woman who is tired of the daily routine when evening comes, finds enjoyment in a change of activity. In fact, when a craft activity is adopted, the evening frequently slips away before they know it. Some seek these activities but cannot find them. Industrial arts can furnish programs and leadership. The University of California has found that few classes are opened which are not filled, particularly in the industrial arts subjects. The activity may be operated on a tuition basis or, to inaugurate the project, it may be wise to attempt it on a voluntary basis. Later the fees necessary to make the program self-sustaining and to pay the instructor, may be introduced.

The most suitable group of people with which to work are those just married or just out of high school. They have broken old ties and are seeking new associations. An evening class in upholstery, for example, furnishes an excellent opportunity for them.

Life expectancy now has increased to 65 years. After 49, some people do not care for dancing as a major recreational activity. They like to associate with those of their own age and kind. Either a formal evening class can be established, or a club where initial instruction may be carried on. Interests can be determined by a telephone or letter survey or by a sponsorship from a service club. Men in service clubs usually are of the ages indicated.

If the motto of these people is "add years to your life," it should be followed by another: "Add life to your years."*

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*Schnell, Dorothy M., *Characteristics of Adolescence*, Minneapolis, Minn.: Burgess Publishing Co., 1946.

*Landis, Paul H., "Today's Bargain: 16 Extra Years," *Better Homes and Gardens*, December, 1947, Pp. 153.

"Good" Grass Isn't Good Enough!

The output of our grasslands can be doubled!" Top experts of the U. S. Department of Agriculture will tell you that. So will many a farsighted rancher and farmer out of his actual experience. So will students and teachers of land management everywhere . . . In that bright possibility of range and pasture improvement lies one principal hope for *more* food for a hungry world. Not only more food, but *better* food. For *proper grassland management* will improve the fertility of the land, and the nutritive value of the foods coming off it. It will save the land, too, protecting the precious layer of topsoil from blowing away or washing off to sea. And it will increase the amount and value of hay for cash-crop or winter feeding.

The way is wide open for you to improve *your* grass. Strong and willing allies stand ready to help you. *For advice* and active help in planning your own grass-management program, there's your County Agent . . . *For technical, practical help* in putting your program into operation, call on the Soil Conservation Service technician who lives in your district . . . And *for information* on newest experimental developments, call on your State Agricultural College or experiment station.

The program of good management for *your* grassland which you work out together will probably consist of some—or perhaps all—of the following practices. *If you're in the range country:* (1) Livestock numbers balanced to the amount of grass you can produce. (2) A rotation schedule of seasonal grazing. (3) Water located conveniently. (4) Elimination of excessive brush. (5) Wider distribution of salt to prevent over-grazing near salt source. (6) Reseeding of over-used or abandoned range. (7) Introduction of improved native grasses and adapted new grasses. (8) Irrigation. (9) Protection against wind and water erosion. *If yours is farm pasture land:* (1) Liming. (2) Fertilization. (3) Seeding with pasture mixtures which stretch the grazing season at both ends. (4) Weed control by mowing or chemicals. (5) Rotation grazing. (6) Avoidance of over-grazing. (7) Irrigation.

We of Swift & Company have the same deep, basic interest that you have in range and pasture improvement. More and better grass is to our interest as it is to yours—and to the nation's. That's why we urge you to act, if you have not already done so, to increase the productiveness of *your* grasslands.

Soda Bill sez:

. . . that flattery is soft soap—
and soft soap is mostly "lye."

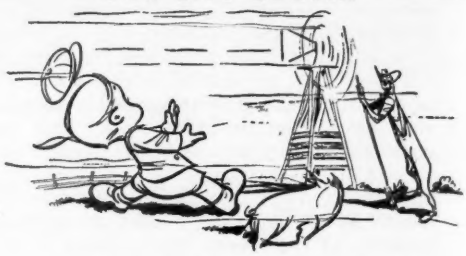
"Weigh 'em to Swift!"

The pen gate opens and cattle crowd into the alley, headed for the scales. A cry rings out, "Weigh 'em to Swift!" Another lot of livestock has been sold to Swift & Company. That deal is a miniature of the business relationship between livestock producers and meat packers.

When this lot of steers was "finished," the producer sent them to the stockyards, consigned to a commission firm. In the "yards," livestock buyers came to look and make their competitive bids. Competition is always keen because 26,000 meat packers and other commercial slaughterers in the United States are active in livestock buying. Each buyer knows that unless he bids "the going price" for the animals he wants, some competitor will get them. Also, he knows that if he bids too high his company will take a loss.

Thus competition and the law of supply and demand set the prices all along the line. This load of steers went to Swift & Company because the Swift buyer offered more than other buyers. And the price he paid was based on his estimate of what the meat, hides, glands and other by-products would be worth to Swift & Company.

OUR CITY COUSIN



Cries Our City Cousin to the hired man,
"Please turn off that big electric fan!"

"Pitted" Pastures Produce More Grass

As reported by A. L. Nelson, Robert Lang and Oscar Barnes of Wyoming Archer Field Experiment Station

"Pitting" pastures has stepped up grazing capacity of range land by as much as one-third, according to the Archer Field Station in southwestern Wyoming. "Pitting" is a simple mechanical treatment. It can be done with a one-way Wheatland plow with alternate eccentric disks. These eccentric disks leave a waffle-like surface with pits about 16 inches apart. The pits trap water, help produce more grass.

The eccentric disks are 2 inches larger than the others, with the gang bolt hole 2 inches off center. In mounting the eccentrics, you start from the rear and replace every other disk with an eccentric. Mount the first eccentric with the long side up, the second with the long side to the rear, the third with the long side down, and the fourth with the long side to the front. Continue in the same rotation until all disks are mounted.

Best time to pit is early spring, before much plant growth has started. The cost runs from 50 cents to a dollar an acre.

Martha Logan's Recipe for

SPRINGTIME PORK AND VEAL

½ pound pork shoulder
½ pound veal shoulder
½ cup diced rhubarb
1½ teaspoons salt
2 tablespoons flour
1 tablespoon sugar
¼ cup water

Cut pork and veal into 1-inch cubes. Brown in heavy skillet. Add rhubarb. Cover and simmer 1 hour. Remove cover. Combine salt, flour, sugar, and water. Stir lightly into meat. Simmer 5 minutes to blend. Serve hot with or without toast. (Yield: 5 to 6 servings.)

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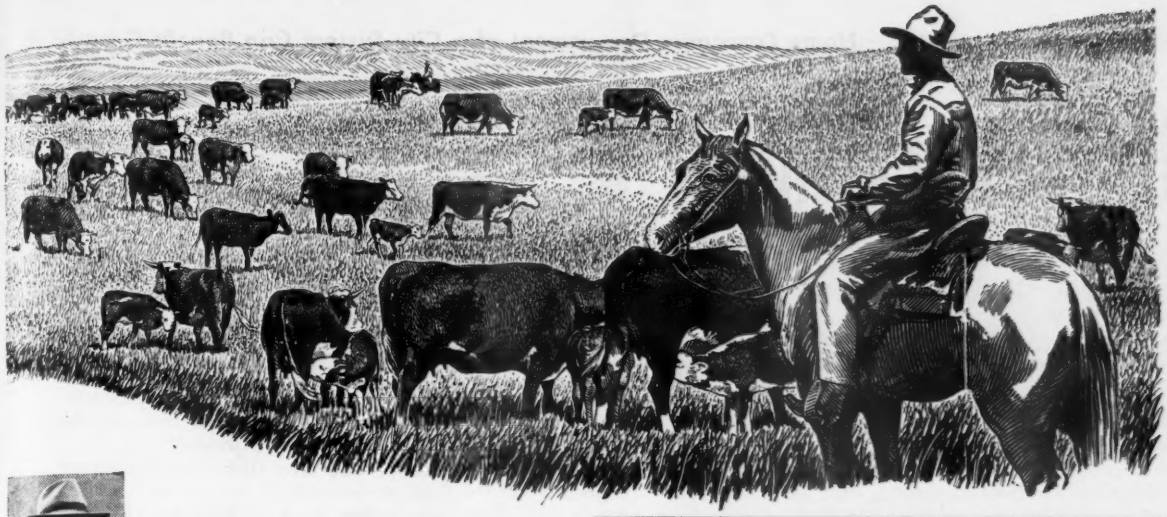

Save More Spring Pigs

by C. M. Vestal, Purdue University

C. M. Vestal

Surveys indicate that one out of every three pigs farrowed dies before weaning age. These death losses are one of the biggest leaks in the hog business. They can be reduced during the cold spring months by the use of electric brooders in individual farrowing houses or pens of a central house.

A three-year study and observation of 105 litters showed that an average of one and one-half more pigs was saved per litter when electric brooders were used in individual farrowing houses. The death loss from chilling was 10 per cent in the unheated houses against 2.2 per cent in those equipped with heated brooders. These losses in the houses without heat increased when the weather became colder. Outdoor temperature, however, had little if any effect on death losses when the electric brooders were used.

The electrically heated pig brooder, either home-made or a factory-made type, proved to be the most practical method of supplying heat. The brooder provides a small area in the pen or house which can be heated economically. The simplest type of brooder is a 150-watt reflector flood lamp suspended over a protected area for the pigs in a corner of the pen or house. Installation and use of electric pig brooders require the necessary careful handling of electricity.

Details for the construction of a pig brooder usually may be obtained from county agents or Agricultural Experiment Stations.

"Red Wagon" now available

A historical 45-minute movie showing the birth of a great industry . . . the romance of the cattle business when the West was young . . . all captured in Hollywood-produced 16-mm. full color sound film. An inspirational and entertaining film, it has proved to be valuable in classrooms, clubs, etc. There is no rental charge. Users are asked only to pay the one-way express fee. All requests handled on a first-come, first-served basis. Get yours in early. Write to "Red Wagon," Swift & Company, Public Relations Department, Chicago 9, Illinois.

Profit Comes From SAVING!

The story at the head of this page is about farmers and ranchers making the most of their grasslands. By good planning, managing well, and operating efficiently, they can grow more grass, produce more food for the world, and make more money. While writing that story, I was struck by a similarity in the Swift business. For it is careful planning and efficient operation that keep us in business, too. Like you with your grassland, we've got to *make the most of what we have*. We've got to practice efficiency. We, also, must cut costs, operate with economy. Not only the important economy of finding uses and markets for every possible by-product, but economy and efficiency *all along the line*.

Maybe you saw Swift's recent financial report for 1947. It showed that we earned $22,334,977 after provision of $12,000,000 for high cost additions to fixed assets. This earning represented one cent out of our average dollar of sales. That one cent was earned *in large part* by the *savings* we made. The operating figures of our business prove that statement. They show where the savings came from. New methods of doing things which save time and cost. Modern equipment replacing old, worn equipment. Better ways discovered by Swift research to produce, use and handle Swift products. A small saving here . . . another there . . . little economies pyramiding into big economies. Until, added together, the savings which we made last year in the actual day-by-day operation of the Swift business amounted to a considerable part of our earnings.

Careful planning, good management and efficient operation are "musts" in our business as in yours. "Little things" can often add up to the difference between a profit and a loss.

FM Simpson.

Agricultural Research Department

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Home Economics Department of a City System Can Benefit Greatly

Why Supervision?

KATHERINE A. TUCKER
Supervisor of Home Economics
Topeka Public Schools, Kansas

IMPROVEMENT of instruction is the goal of all supervision and many factors enter into it. A good supervisor looks first to the personal adjustment of her teachers and tries to be sure that each teacher's living conditions are conducive to happiness and security. Only a well-adjusted teacher can give her best to the total personality development of her pupils and to the important job of class instruction.

Since teachers are individuals and vary in personality, background, training, and experience, their needs will vary. No set of rules or practices can be used successfully for everyone in an in-service training program. Each teacher should be given the individual help which improves her efficiency. Problems which are common to all teachers are those which concern curriculum, methods, supplies, equipment, teacher-pupil relationships, pupil activities, community activities, and budget allotments.

A teacher new to a system will appreciate a series of indoctrination meetings where philosophy and general practices, school organization, forms and reports, etc., are thoroughly explained. The new teacher becomes orientated to the entire school program, to the curriculum of her special subject, to the personnel, and to the equipment with which she is to work.

In Topeka schools, new teachers are required to attend such meetings a week prior to opening of school. Some of the meetings are conducted by the superintendent, others by the special subjects supervisor.

A good curriculum is basic to good classroom instruction. How the curriculum is developed is the concern of the supervisor. It is well to recognize two important facts: first, that curriculum building is, perhaps, the part of in-service training that stimulates the greatest teacher growth and, second, that any teacher is more interested in using a curriculum and more capable of using it effectively if she has helped in its development. To help teachers analyze objectively present content and practices and to develop an action plan for improvement is a continuing process which contributes greatly to better teaching.

Topeka's development was started with a study of the basic philosophy and objectives. A cooperative study of the home economics program with representatives from the U. S. Office of Education and State Board for Vocational Education as consultants, was the next step. Administrators, parents, and pupils met with the home economics teachers and consultants to discuss needs and interests of junior and senior high school girls and boys and to plan ways of adjusting the curriculum to more adequately meet these needs and interests. Every home economics teacher participated in the study and helped write the summary and recommendations; in doing so, each gained in professional growth.

Each year since the study a special activity has been selected for emphasis. The first year the home economics staff worked on interpretation. The second year they centered attention on improvement of methods. This year they are introducing some new courses and revising certain phases of the curriculum.

Seeing is much more effective than *hearing about* especially in the field of methods. A teacher can secure much help and inspiration in a short time through class visitation. Any supervisor's program of work may well include substituting for teachers so they are free to visit other home economics teachers. If a teacher is new to the system or desires special help, it is well to suggest the teacher and class to visit. Incidentally, spending a day as a classroom teacher is a valuable experience for the supervisor.

Monthly staff meetings are held for the study of the specific problem selected for the year. Frequently outside authorities and administrators are invited to meet with the staff for these discussions. Teachers bring illustrative material, teaching devices, and examples of pupil work for interchange of ideas. Common problems are freely discussed and solutions suggested.

Special staff meetings provide opportunity for in-service training along specific lines. As an example, a demonstration lesson was given by a junior high school teacher and her pupils on the use of moving pictures in home economics classes. A film on child care, which was to be used in each school the following week, was used for the demonstration. Much more effective use of all films as teaching devices has resulted from this demonstration lesson. At another special meeting, an expert dressmaker met with teachers to demonstrate professional methods and finishes.

Home economics bulletins are sent to all home economics teachers (and frequently to administrators), whenever information important to them makes such a bulletin advisable. These bulletins always start with the yearly goal. The 1945-46 goal is an example: (1) Curriculum adjusted to meet the present emergency; (2) higher standards of works; (3) better understanding of girls' needs and interests; (4) rooms attractive, homelike, interesting; (5) better interpretation of the home economics program in the school and community.

For 1946-47 the slogan was: "Let's Make Our Best Better." Special bulletins are issued occasionally such as the one this year: "Christmas in the Home Economics Department."

Another important activity of a supervisor is to provide teaching materials. At the elementary level materials have been provided on nutrition education, and for all pupils, on a better breakfast unit and a clean plate unit. New information which reaches a supervisor's desk should be passed on immediately to teachers or other groups. Allotment of the budget to provide teaching materials for a balanced and enriched program in all areas of home economics, helps the teacher carry out the curriculum and encourages good teaching.

(Continued on page 35)

Cupboards and kitchens separate the room into work units

The living-room unit has been made comfortable and useful

Vocational Departments Cooperate

Pennsylvania School Shop Students Remodel Home Economics Department

NEVILLE SCHOOL in Pennsylvania has learned that it can be almost self-sufficient when it comes to upkeep, repairs, and even major remodeling projects.

Last summer the board of education decided that the home economics room should have a complete modernizing and revamping job. It was taken for granted that the school would be at the mercy of contractors and the ever-increasing scale of prices, until a board member suggested that the shop teacher might have some suggestions. He did, very definitely, with the result that the complete remodeling job was done by boys from the shop classes of grades 10, 11, and 12, under his supervision.

The plans and much of the material were ready before the close of the school term in June, 1947. Construction was completed during June, July, and August.

Preparing the plans and the subsequent drawings were the work of the home economics teacher, Mrs. Constance White. With consideration for the future as well as for the present, Mrs. White included in her plans three complete kitchen units in foods, with one electric and two gas stoves; facilities for sewing and clothing work; a living-room; a laundry unit; and an automatic dishwasher and garbage disposal sink, the latter two to be added next year.

The major part of the work of the boys and their shop instructor was in fabricating, finishing, and installing the 11 sets of cabinets necessary in making the different units around the room. They did many other jobs incidental to construction work also. The quality of the workmanship must be seen to be appreciated. "There could be none finer regardless of who did the work," was the comment of one group who inspected the completed job.

An important factor in the undertaking was the modern and complete shop in which the boys receive their training, and in which the major part of the cabinet work was done. They had at their disposal facilities for working with lumber from the rough board to the finished unit, in addition to machines, tools, and other equipment needed for any kind of work they might be called upon to do.

Every student in the junior-senior high school enjoys the privilege of the new room, including the boys. Boys in junior high school are scheduled for home economics each week while girls attend shop classes at the same hour. Every girl in the school is enrolled for general home economics in grades 7, 8, and 9 and for vocational home economics in grades 10, 11, and 12, in a program organized under the George-Deen Act. One of the best features of the work is the small number in each class—10 to 16—allowing each student ample opportunity to use the equipment.

The new room for home economics has been in operation several months. The improvement in work habits and the quality of the finished products have been noticeable, proving that students of all ages will appreciate money and effort spent to make their education better and more worthwhile.

With the addition of the sinks and laundry units the home economics department will be a practical example of modern conveniences and equipment for efficient teaching of up-to-date and accepted methods in homemaking, home nursing, and cooking.

The undertaking was a very healthy and profitable one for Neville School. Besides being of value to the boys who did the work, the project brought the district a saving in cost. In addition, the board of education, pupils, and townspeople always will speak with pride of what the school was able to accomplish with its own effort and equipment.

California's Distributive Education Staff Makes Good Use of This Method

Packaged Programs

LAWSON V. POSS
Special Supervisor, Distributive Education
California

THE World War brought about many great discoveries. It also brought about the rediscovery of the value of training. It not only was necessary to train workers in the technical skills of their jobs, but it was also necessary to train those who had the responsibility of supervision.

The supervisory programs which were best known were the "J" programs of the Training-Within-Industry Service of the War Manpower Commission. Millions of supervisors were trained in these short 10-hour miniature management courses. Stuart Chase wrote about them in *Reader's Digest* in an article for each program: Job Instruction Training, Job Relations Training, and Job Methods Training.

When, where, or by whom these programs were tagged "packaged" programs is unknown but the name has persisted. It designates a type of program that has definite characteristics and advantages and some limitations, also.

The term "packaged" is not generally well known. A recent newspaper article gives a good example of some of its important connotations. The caption read, "Packaged Power Plants," and the news item reported that a large national electrical concern was manufacturing small, complete power plants to supply all the power needs of small communities. The article read: "They are called 'packaged' because they are highly compact and standardized, completely self-contained, requiring only the addition of a building to house them."

A packaged educational or training program first of all is standardized to the extent of content and pattern of presentation. The subject matter is written in conversational style in the Leader's manual, accompanied usually by marginal directions for timing and transition from one topic to the next.

In a way, the guide might be much likened to the script for a movie. The leaders who give these packaged programs have been instituted and certified in the use of the manual and instructed in the strategy of the immediate objectives, the content of the training course, the demonstrations or audio-visual aids used, and in the conference leading techniques of presentation and discussion. Thus groups of students in different localities receive an almost identical presentation. This has been of great service to trade and business organizations, chain organizations, and to organizations having many branches in various communities who wish standardized courses to fit into their total training programs. Such business organizations can have their local member units or branches call on their local school districts or the local distributive education coordinator and receive this valuable educational service.

California's distributive education coordinators all have been instituted in these packaged programs. In communities where there are no distributive education coordinators, the school districts may call upon the regional offices of the state staff and specialists in these packaged programs present them.

Most of the packaged programs are compact and planned for either five or six 2-hour meetings. The important points brought up in the meetings are either printed on pocket-sized cards or on standard-sized mimeographed sheets for "take-away" reference material by those in the courses. In many programs extensive use is made of charts, check sheets, blackboard diagrams, demonstrations, sound-slide film strips, and guided conference type discussions. Every effort has been made to minimize the use of the class-front lecture method and to substitute the informal conference and discussion group atmosphere. For this reason, most programs are best suited for groups of 15 to 25 persons. The exception is the Successful Retail Selling course which can accommodate more.

These programs are so well planned and tested that they are practically self-contained and can be given in most any type of room that has proper ventilation and comfortable chairs. They have been conducted in classrooms of local school buildings and directors' rooms of large business organizations.

If handled properly, packaged programs are highly successful. The leader or instructor is the key to a successful presentation. His skill overcomes the one limitation of the packaged program—keeping it from seeming canned or cut-and-dried. He must have had enough business experience and background to have the poise and assurance necessary to capture the confidence and cooperation of the group who usually are on the job, and whose thinking is close to the job. The leader's skill and personality in turn puts the group at ease and encourages their participation. These programs have taken into consideration the value of "learning by doing."

The results of packaged programs, according to surveys, testimonials by those who have attended, business leaders, and school administrators are gratifying. They are not exclusive with distributive educators. Other vocational areas use them and have some very effective supervisory packaged programs. There also are private training firms who use their own packaged programs in large business organizations and public utility companies.

In the California distributive education program there are now six packaged programs in use. The first year after the war ended 36 per cent of the total classes held were in packaged program courses. For the year ending June, 1947, this figure had increased to 42 per cent. For the year ending June 30, 1946, 16 per cent of the total enrollment was in packaged programs, and this rose to 27 per cent at the close of last year, June 30, 1947.

It is the policy of the state staff to develop one packaged program a year in needed areas of adult business vocational education.

SANTA MONICA Entertains AVA Group

Guests Talk Over "Ham" Station
See a Starlet Being Photographed

Vocational leaders at Saint Monica statue in Palisades Park

LEADERS in vocational training from various sections of the United States, Canada, Puerto Rico, and India visited Santa Monica's Technical School December 17, when three busloads of delegates to the national convention of the American Vocational Association in Los Angeles, made a guided tour to Santa Monica.

More than 100 visitors made up the delegation, according to Robert S. Fitzgerald, director of the Technical School, who accompanied the group from Los Angeles. They included heads of vocational schools and departments, state officials of vocational training programs, representatives of the vocational training section of the U.S. Office of Education, and heads of vocational training in industry.

The Santa Monica Chamber of Commerce was co-host with the school, providing transportation. The visitors were greeted in Santa Monica by Mayor Mark T. Gates; William Ware, executive secretary of the Chamber of Commerce; Dr. Percy R. Davis, superintendent of schools; and Dr. Elmer C. Sandmeyer, president of Santa Monica City College. They were served doughnuts and coffee before their tour of the school which included observance of classroom instruction and shop training.

Many features were planned to make the tour of Santa Monica Technical school unique. Hollis Brown and his radio classes arranged for visitors to talk through the school "ham" radio station W6-SNX, to "ham" operators in their home towns. The guests had the opportunity to see the school's new FM radio station KCRW, which was constructed by the radio class.

Howard Jones' photography classes were seen photographing one of Paramount's starlets, Jean Marshall, who soon will be seen in "Emperor's Waltz." The pictures were taken in color and the complete operation was viewed by the visiting group.

In the evening when the Association met at the Earl Carroll Theatre Restaurant for the annual banquet the Technical School provided match folders which were made by the photography class, as favors for the party. Each folder had a picture of the entrance to the Technical School on the front, to remind the visitors of Santa Monica Technical School after they had returned to their own communities.

International Children's Emergency Fund Asks Help

EUROPEAN children in nine nations now are receiving food through the International Children's Emergency Fund, the United Nations organization responsible for the feeding program. The nine nations are Austria, Bulgaria, Czechoslovakia, Finland, Greece, Hungary, Italy, Poland, and Roumania.

Albania and Yugoslavia are to begin receiving help this year. An urgent appeal also has been made for 290,000 French children. France is among the contributing nations to the Fund and deferred any request for aid until needs in other countries had been considered. Another nation which may be helped this year is China.

Feeding programs are being operated in accordance with plans worked out by the ICEF and the governments. Missions in the countries affected work with government officials in distributing the food, and no consideration is given to nationality, race, creed, or political affiliations.

The Children's Fund has been definitely promised contributions of $39,000,000 mostly from governments. The full contribution of the U.S. government, however, was made contingent upon contributions from other governments and many have not been able to contribute either goods or money.

In the U.S. the effort to get voluntary contributions is being made through the American Overseas Aid-United Nations Appeal for Children.

The meal which children are getting costs about seven cents a day. ICEF is contributing three and one-half cents by providing powdered milk and in some instances a little lard or margarine, economical types of meat and fish for stew, or sandwiches. The balance of the meal is made up of indigenous foods supplied by the recipient governments such as bread, spaghetti, cereal food, potatoes or other vegetable, and in some places, fish. Cod-liver oil has been contributed by Newfoundland and Norway also is being made available. Denmark will make available BCG vaccines, technical services, and facilities for conducting anti-tuberculosis vaccinations in selected areas. Poland has promised sugar, and Hungary and Italy as well as Poland have agreed to cover the cost of transit across their countries for supplies destined for other countries.

Temporary headquarters of the Emergency Fund are at 1344 Connecticut Ave., N.W., Washington 6, D.C.

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War Assets Administration Issues Donation Policies

THE War Assets Administration has issued General Letter No. 251 which deals with donations of surplus personal property.

Eligible "donees" are defined as (a) agencies or institutions supported by the Federal government, (b) agencies or institutions supported by any state or local government, and (c) non-profit educational or charitable institutions which are exempt from taxation under Section 101 (6) of the Internal Revenue Code.

Surplus personal property is deemed suitable for donation when (a) it can reasonably be expected that the property has no market value for the purpose for which it was originally intended; that is, it has no commercial value, or (b) the estimated cost of its care, handling, and disposition would exceed the estimated proceeds of its sale for any purpose. In order to establish an adequate record, a written finding signed by the zone administrator or regional director of an operating field office must be made affirmatively showing that the property comes within the criteria of donable property. This finding must be properly filed and copies forwarded to the deputy administrator for General Disposal and the director of Priority Claimants Division in Washington. All donation programs up to $100,000 acquisition costs must be approved by the regional director. Programs from $100,000 to $300,000 acquisition costs must be approved by the zone administrator, and programs over $300,000 acquisition cost must be approved by the deputy administrator for General Disposition before any donation offering takes place.

Every effort must be made to offer surplus personal property (by line items, lots, or entire inventories at locations) suitable for donation to eligible donees in order to expedite disposals, including the Deactivation Program.

Disposal policies follow:

"(a) Whenever property has been fully and adequately offered for sale in the proper markets at fixed prices to priority and non-priority purchasers, the residuals from such offerings shall, if found to be suitable by the Priority Claimants Division, be made available to eligible donees prior to re-offering by any other method of sale.

"(b) Whenever surplus personal property has been appropriately offered initially by competitive bid, the residuals from such offerings shall, if found suitable by the Priority Claimants Division, be made available to eligible donees prior to any re-offering of such property.

"(c) Surplus personal property subject to the provisions of the JANMAT program must, in all cases, be screened by JANMAT prior to any offering to eligible donees.

"(d) Surplus personal property in WAA inventory which has been predetermined to be scrap shall be offered to eligible donees prior to offering such property for sale as scrap, provided the property is found to be suitable for use of donees by the Priority Claimants Division.

"(e) Surplus machinery of any type which was manufactured during the year 1921 or any year prior thereto and was not rebuilt since 1921, shall be offered to eligible donees prior to offering such property as scrap.

"(f) Commercially unsalable special machinery listed in WAA Regulation 13, Order 1, shall be offered to eligible donees prior to any offering of such property as scrap, provided the property is found to be suitable for use of donees by the Priority Claimants Division.

"(g) Production equipment listed in Exhibit A of WAA Regulation 21 may not be donated for any purpose other than instructional use without first obtaining the approval of the Administrator or the Deputy Administrator for General Disposal.

"(h) Zone administrators or regional directors may determine in a written finding that all property physically situated in a given location should be classified as donable property in accordance with the criteria described in paragraph 3 above (in WAA Letter 251). Whenever the zone administrator or regional director shall make such finding, he may direct that all such property in the location be offered to eligible donees, except that items on the Veterans Set Aside List may not be included in such finding and, further, that items subject to the JANMAT program must have previously been screened by JANMAT. The zone administrator or regional director shall establish a reasonable period of time by which the donated property must be removed from the location by the donees."

Whenever surplus personal property is offered, the zone administrator or regional director determines the period of such an offering. It is to be of sufficient duration to assure an adequate offering, but is not to exceed 30 days.

The Priority Claimants Division in each regional and zone operating office is to ascertain whether line items, lots, or entire inventories are desired by eligible donees. The Priority Claimants Division arranges for all necessary written findings and coordinates its activities with other divisions of the Office of General Disposal, and with the Office of Information and Advertising, in effecting disposal to eligible donees.

The donation policies and programs contained in Letter No. 251 are to supplant all existing disposal programs. Aircraft and Electronics Letter No. 21 Revised (Nov. 28, 1947) is to continue in full force since it is in accordance with the policy in Letter No. 251.

While the provisions of Letter No. 251 were made immediately effective, it was with the provision that the Office of General Disposal and the Accounting Division would issue procedures to implement the policy determinations.

Latin-American Fellowships

Three South American students will be awarded $1,000 fellowships for graduate study in engineering and science at the Carnegie Institute of Technology for the year 1948-49.

The one-year fellowships, which are awarded by the Matthes Foundation, New York, are open to any Latin-American student who has completed with distinction or will have completed by September 1, 1948, the requirements for a bachelor's or higher degree in engineering or physical science.

Examinations are to be held in the candidates' respective communities under the auspices of the Graduate Record Office of the Carnegie Foundation.

Deadline for filing applications has been set for April 15.

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By Shriver L. Coover. Projects and problems of everyday interest and usefulness, geared to the actual needs of beginners, and suitable for the school shop. Unit structure enables each pupil to progress at his own speed. Includes blueprint reading and much related information. $1.48

ELEMENTS OF RADIO SERVICING

By Marcus and Levy. A how-to-do-it text dealing with all phases and problems of modern radio servicing. Stage-by-stage approach, analyzing the superheterodyne standard circuit. Stress on servicing procedures. Presents service problems covering 90% of modern servicing. $3.60

ESSENTIALS OF RADIO

By Slurzberg and Osterheld. Explains principles of operation of vacuum tubes and their basic circuits and applications of circuits to low frequency radio receivers. All recent advances. Requires a minimum of mathematics. $4.00

CARPENTRY FOR THE BUILDING TRADES

By Elbert A. Lair. Deals with all phases of carpentry for the building trades. Emphasizes tools and methods needed for the construction of small residences and frame houses. Easy-to-grasp how-to-do-it approach. $1.80

SIMPLIFIED ROOF FRAMING

New Second Edition. *By Wilson and Werner.* A carefully edited revision, bringing all material up to date and adding two new chapters on short-cut methods, the steel square and its use, and review of basic principles. $1.80

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Fundamentals of Carpentry, by Walter E. Durbahan, edited by J. Ralph Dalzell. American Technical Society, Chicago, Ill.

Fundamentals of Carpentry presents in clear, concise language the related technical information required for the carpentry craft as it applies to the tools, materials, and practices of the trade. The text should prove especially effective in the instruction of apprentice and journeymen carpenters and in vocational building trade classes on the secondary school level.

This book is the result of Mr. Durbahan's background of more than 30 years as a carpenter, craftsman, and teacher, and his experience in selecting and developing instructional material essential to the building trades student, the apprentice, and journeyman carpenter. This material now is presented in the form and sequence which has proven most effective over a period of years.

The book does more than include major subjects the carpenter is required to know. It is a sincere attempt to give in complete and comprehensive form essential information normally acquired by the journeyman through years of experience. The interesting presentation of many of the units should serve to stimulate the vocational student or apprentice to strive for recognition as a skilled craftsman rather than merely meeting minimum standards of accomplishment.

The book is intelligently and profusely illustrated, which assists the student in visualizing and interpreting the printed material. Worthy of special mention is the 58 page "Dictionary of Carpentry Terms"—a practical aid in learning the language of the trade. The text is well indexed and will serve the journeyman as a handy reference for solving many everyday problems.—*Fred W. Swan, Supervisor, Trade and Industrial Education, Board for Vocational Education, Illinois.*

Selling in Stores, by Paul E. Smith and George E. Breen. Harper & Bros., New York, N. Y.

This excellent book will be most welcome to the coordinator and teacher of retail selling classes for use as a basic text and classroom reference. *Selling in Stores* is slanted toward the part-time cooperative distributive education program, but will fit into the teaching techniques of non-cooperative salesmanship classes as well.

Chapter organization follows the natural continuity of events inherent in job-chosing and job-preparation. The new employee starts with the complex problem of choosing the right job, the interview, learning the job routine, learning the many selling and non-selling duties, and the human relation contacts between employees.

Selling as a career is treated not as a glamorous profession into which all people can fit or adapt themselves, but rather as a career of specialized training, where the student achieves maximum proficiency through directed and related study and on-the-job training experience.

The chapter units on the job interview and on human relationships between both fellow employees and supervisors is particularly outstanding in treatment and content. The relationship of the selling process to the on-the-job selling experiences is clearly and forcefully presented.

Teaching aids and suggestions end each chapter unit. Case study problems in each unit are thought-provoking and should stimulate worthwhile discussion. Excellent and concrete examples of specific situations which lend much emphasis to the learning and study outcomes of the student are sprinkled through the entire text.

In summary, this book is timely, flexible to different teaching techniques, and contributes much toward smoothing the entrance of the student into training for a career which will develop the nation's future merchants.—*Jess E. Powers, Teacher Trainer in Distributive Education, Indinia University, Bloomington, Ind.*

An Approach to Radio, by J. B. Shrewsbury. Electronic Industries, Princeton, Ky.

This book presents an original and interesting approach to the study of radio. Planned for the beginner, layman, student, and hobbyist, it answers the questions most often asked about radio in a direct, easy-to-understand manner without going into detailed discussions of historical and engineering developments.

The author chooses the audio oscillator as the first piece of equipment to explain. Simple receivers, amplifiers, and transmitters also are covered in the eight chapters (288 pages) and brief explanations of television, FM and radar are included.

One section is devoted to amateur radio activity. Instructions are given for using the audio oscillator in learning the International Morse Code. The student is told how to meet requirements of the Federal Communications Commission for an amateur station license and for an operator's license. While not designed primarily as a how-to-build-it text, the book does give detailed instructions for constructing the audio oscillator, amplifier, and simple receivers that are described.

High quality paper, readable type, and outstanding illustrations contribute to the general excellence of the book. More than 125 original pictorial and corresponding schematic diagrams are valuable aids to understanding the text material.

The author's experience as a radio operator, service man, teacher, and educational officer in the Navy gives him a rich background on which to draw in writing a text that provides an understandable approach to radio. —*Thomas L. Hankins, Associate Professor of Industrial Education, University of Kentucky.*

The Moods of Type, by Clayton Whitehill. Barnes & Noble, Inc., New York, N. Y.

A subjective analysis of typography in the tradition of the Bauhaus school, this volume contains nine full page halftone plates, 14 text illustrations, and 10 double spread type charts showing 72 complete alphabets.

An epilogue proposes the author's suggestions for reform of the conventional Roman alphabet by inclusion, among other things, of several new phonetic symbols. — *Bruce Buttles, Head, Department of Printing, Carnegie Institute of Technology.*

American Women in Nursing, by Edna Yost. J. B. Lippincott Co., New York, N. Y.

A stimulating book to put into the hands of the many home economics students in high schools who are interested in becoming nurses. Biographies of 10 leaders in nursing show the scope and variety of possible services. A light, easy style, a discriminating choice of fact and anecdote, and a fine understanding of the profession make this book worthwhile and delightful reading.—*Letitia Walsh, Head, Home Economics Education, University of Illinois.*

Simplified Perspective, Its Theory and Practical Application, by William Wirt Turner. The Ronald Press, New York, N. Y.

The basic principles of perspective drawing are set forth in a thorough but not too technical manner. Many high school instructors have refrained from introducing perspective drawing because methods most generally presented are too involved. However, the author presents a plan for perspective drawing, as almost directly parallel to orthographic projection, making it comparatively easy for instructors to have students of orthographic projection apply this knowledge to perspective drawing.

The author's experience as a teacher and his wide practical experience have enabled him to present a method of perspective drawing free from bewildering and complicated effects and shortening the time usually needed to become accomplished in

this field. In the latter part of the book he presents the more formal method of perspective which the student can then master in a short time.

Especially noteworthy is the fine series of illustrations, with copious notes, explaining in detail the principles involved. It is not necessary to turn to text material to find explanations.

The book approaches the subject from the problem-solving angle, making the student produce drawings understandingly rather than from memorizing rules and routines. At the end of every chapter, the book presents excellent teaching material in the form of review questions, and a well-selected and graded list of problems.

Perspective drawing no longer is chiefly concerned with architectural applications, but is rapidly finding its way into the industrial field. This book will be helpful in giving the student an understanding of perspective principles which he can then apply to freehand sketching for industrial uses. It also is a ready reference for those who have need for a practical working manual.—*G. F. Weber, Vocational Director, School City of South Bend, Indiana.*

Wealth Through Education, by V. L. Cox. Stephen-Paul Publishers, New York, N. Y.

In the minds of most educators there no longer is any doubt that a great many young persons in this country are not securing the education to which their capabilities entitle them, and that the education they are getting could be greatly improved. One of the more recent reports dealing with this condition is that of the President's Commission on Higher Education which presented figures to show that at least 32 per cent of those between the ages of 18 and 21 have the mental ability to complete a college or professional education—double the number now in college. The paucity of education for those in the lower age groups in many states is too well known to need comment here.

The author of *Wealth Through Education,* who has dealt for many years with the business aspects of education, reviews this condition and develops a thoroughly logical plan for making education available to all.

The author's thesis, briefly, follows: A nation's wealth is produced by the creative use of the energies of its citizens. Education which properly trains those energies is the determining factor, therefore, in the extent of prosperity a country may enjoy, as is shown by the close correlation between the wealth of a country and the degree of education of its citizens. Furthermore, a nation's use of credit correlates closely with both its prosperity and its standard of education.

Since, then, education is the determining factor in the prosperity of a nation, and since personal credit correlates so closely with both education and prosperity, a further use of personal credit for the ends of education will not only offer training to all on an equal basis, but will also increase immeasurably the wealth of a country and its citizens it is contended. The plan proposed to gain this end is a system of government insured loans for all young persons between the ages of 10 and 24. These loans would be handled by the local banks, would draw interest at 2½ percent, and be payable after 20 years. The person to whom the money is loaned would pay his own tuition directly to the school or teacher, the continuation of the loan being contingent on his school record.

It is impossible in the brief space of a review to present an adequate explanation of either the plan or its method of operation. But every proposition set forth is fully supported by facts and every possible objection to the plan is considered.

This is an unusual book in that it establishes with such an impressive mass of statistics the economic foundation of education. If the plan were put into effect, it would provide a culture and a way of life far in advance of any yet known in this country.—*Charles A. Fritz, Washington Square College of Arts and Science, New York University.*

Workbook in Mechanical Drawing, by S. L. Coover. McGraw-Hill Book Co., Inc., New York, N. Y.

Here is a good introductory course in mechanical drawing written by a prominent Pennsylvania educator. It is interesting, challenging, and very thoroughly motivated. It is well correlated with a good industrial arts course. Mr. Coover uses for his problems and projects such things as interest any wide-awake boy: soft ball diamonds, tennis courts, air ports, fruit knives, hunting knives, jewel boxes. The first thing you know the student has mastered the units into which the book is divided—blueprint reading, the projection box, sketching, home planning, practical drawing, and special shop projects.

Mr. Coover, former secretary-treasurer of the Pennsylvania Vocational Association is a machinist by trade. He heads the Department of Industrial Arts Education at California but has also taught at the University of Pittsburgh and the Pennsylvania State College.—*J. C. Allen, Superintendent, Soldiers' Orphan School, Scotland, Pa.*

Adult Education for Homemaking, by L. Belle Pollard. John Wiley & Sons, Inc., New York, N. Y.

Designed for use as a textbook for college and university students, this is a new and completely rewritten edition of Miss Pollard's book on adult education. It also is addressed to administrators and teachers, pointing up the educational progress made in inaugurating new programs in home and family life and the effort toward strengthening existing programs. All references are made to both women and men as homemakers.

The book is written with the point of view of one working continuously with teacher-education programs and with groups of adults in a variety of educational organizations. No one could read the edition without a keen awareness of the author's emphasis on purposive learning for adults. Much of the content is devoted to

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encouraging program participants to formulate their goals, to work toward their achievement, and to measure their progress in learning. Techniques outlined for directing the learning of adults should be of very concrete help to the inexperienced teacher. The experienced teacher is challenged to set up learning experiences to meet the interests and needs of adults, thereby facilitating progress in learning and the development of a functional program. A plea is made to teacher training institutions to develop leaders for the organization of community programs in home and family life education.

The outline form makes the edition easy to read. The bibliography suggests a wide variety of readings to college students and to in-service teachers. The book also points out needs for adequate housing, equipment, and finances for programs for adults.—*Rena L. Hodgen, Chief, Home Economics Education, Illinois Board for Vocational Education.*

Modern Radio Instruments and Testing Methods. Coyne Electrical and Radio School, Inc., Chicago, Ill.

This practical textbook covers the subjects of modern radio instruments and testing methods used by the repair and serviceman. It describes and illustrates the general principles involved in various types of indicating meters, their care and operation. The measurements of low and high frequency circuit devices are contrasted and explained with particular reference to radio and electronic equipment. The method of use as well as theory of bridges in resistance measurements are explained and illustrated. A chapter is devoted to the various types of analyzers and multimeters and their operation. The method of troubleshooting by signal tracing and the instruments used for this work are clearly described. Signal generators and test oscillators and their use in determining both the kind and approximate location of trouble in radio and sound apparatus forms an important chapter. Tube testing equipment and cathode ray oscilloscopes and oscillographs and their tests and measurements complete the volume.

The book obviously is written for the radio serviceman. The more highly theoretical material that might be of interest to the designing engineer is omitted, although enough of the fundamental principles involved in a piece of apparatus are included so the technician understands what is going on when he uses it. It is a volume that should be on the shelf of every radio serviceman who wants to make the best use of his equipment. — *Milton A. Drescher, Chief, Science and Industry Department, Milwaukee Public Library.*

People Are Our Business, by Beryl Williams. J. B. Lippincott Co., New York, N. Y.

For young people who think they want to get into some kind of work that deals with people, this volume will be stimulating and helpful. The author has turned out an entertaining, easy to read, and instructive series of short, personal histories of 10 successful men and women whose business is people.

Although the selections are limited by necessity, the author has chosen occupations with which young people are not apt to be too familiar, yet they are types of work that are assuming great importance and for which the future demand is steadily increasing: young people's librarian, psychiatric social worker, settlement house worker, employment placement counselor, industrial relations director, industrial union secretary, union educational director, occupational therapist and psychologist all require special abilities in addition to ability to deal with people.

The stories are realistic and point out that these successful men and women often arrived at their final job in a roundabout way but that each successive experience contributed to their final location. Each personal history is shot through with good philosophy, sound advice in a palatible manner, and with many tips concerning working and living for the alert reader. Although the biographical sketches do not relate the exact method for arriving at a position or prescribe necessary qualifications, they do impress the fact that the principal characteristic in each case was a deep concern with people.

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Woodworking Crafts, by Raymond Van Tassel. D. Van Nostrand Co., Inc., New York, N. Y.

This is a book that will be of genuine assistance to all who like to work in wood shops, whether the contrived shop of the hobbyist in cellar or garage, or the more formal shop found in schools, community centers, or summer camps.

The book is a compact and authoritative guide to all phases of woodworking including the use of hand tools and simple woodworking machines. The basic operations in woodworking are clearly and simply described and a variety of interesting and attractive projects are presented. Tools, materials, and methods of procedure accompany each of the projects described and many carefully-drawn diagrams and well-conceived photographs help simplify the material for the amateur Craftsman. —*William P. Sears, Jr., New York University.*

The Blueprint Language, by H. C. Spencer and H. E. Grant. The Macmillan Co., New York, N. Y.

This book is the most comprehensive work on blueprint reading yet written for the machine industries. It is adaptable in any academic or industrial range where this type of blueprint reading is taught.

One of the strongest teaching points of the text lies in its skillfully "engineered" illustrations. The thought, careful planning, and execution displayed in these text illustrations strike home point after point with a simplicity and directness not possible in word description.

The conventional "classroom" theory and approach is replaced with examples and exercises taken from actual industrial prints. The text, therefore retains a welcome practical flavor too long absent in similar works on this industrial subject.

The instructor of blueprint reading will appreciate the fact that this book is a complete course within itself. Large format work sheets of cross section grids for sketching are provided along with written and "completion problems." The problem work arranged after each chapter becomes progressively difficult and is closely coordinated with text discussion and examples.

The text contains all necessary information relative to blueprint reading including shape description, dimensioning, threads, gears, shop processes, measuring instruments, first angle projection, welding and commercial print. It is particularly refreshing to see a chapter devoted to the important phase of left and right hand drawings.—*H. H. Katz, Director, Technical Drawing and Engineering Department, Allied School of Mechanical Trades, Chicago, Ill.*

Problems in Drafting and Design, by Francis L. Goff. McKnight & McKnight, Bloomington, Ill.

This book has been prepared for use in teaching the fundamentals of drafting and design to pupils in high school, college, and the trades. The field of aeronautics has been used for the approach. The interest of the student has been challenged through the close correlation of the problems with their accepted place in airplanes, as well as the visual portrayal of how these parts are fabricated.

There are 90 pictures of airplanes, machines used in plane manfacturing, and many operations used in the plants. These pictures with their captions give an interesting view of a great industry.

The fundamentals of drafting are presented through a carefully graded set of 50 assignments. Each is presented in six parts: the problems, the purposes or objectives, excellent pictorial views of the part to be drawn, a list of equipment needed to make the drawing, adequate instruction, with some information and references when needed.

In the opinion of the reviewer, the book might be improved by two changes in the material arrangement. The problems dealing with assembly contours (#12, 13, 14, 16, and 22) might be introduced near the end since they require more detailed workmanship. High school pupils would be served better if the tables and symbols which must now be found in outside references, were included in the text.

The book is an excellent and craftsmanlike addition to the literature dealing with drafting.—*V. L. Pickens, Director of Practical Arts, Kansas City, Missouri, Public Schools.*

Metalwork Technology and Practice, by Oswald A. Ludwig. McKnight & McKnight, Bloomington, Ill.

This book presents in a simple, concise, and well-illustrated manner the basic information required of the metal worker. It is written in a manner to make it particularly useful in industrial arts, general shop, machine shop, and shop theory classes. It is adaptable to any situation wherein a knowledge of the fundamental shop practices are a prerequisite to future study in this area.

The book is divided into 12 major instructional units which in turn are subdivided into 57 minor units. These include such topics as: safety; description of metalworking jobs; layout tools and layout methods; bench

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Considering this book from the standpoint of adaptability to standard classroom procedures, it possesses those qualities often found lacking in textbooks. Organized around instructional units, with every instructional topic numbered, and a 19-page index, it readily lends itself for classroom discussions and class assignments. Added to this is the fact that it is written in a language which enables the student to help himself. All technical terms which the student should know are defined in the context and by means of footnotes. The review questions, mathematics and drafting problems, and the list of new words to be defined and spelled given at the end of each unit are of considerable worth in a variety of teaching situations. The author is to be commended. This book is to the beginner what the well-known handbooks are to the mechanic.—*A. A. Vezzani, Lecturer in Industrial Education, Department of Vocational Education, University of Michigan.*

Retailing Principles and Practices, by G. Henry Reichert. The Gregg Publishing Co., New York, N. Y.

Retailing Principles and Practices, second edition, can be used as a basic textbook for a preparatory orientation course in retailing or as a source of information for students enrolled under a cooperative part-time plan.

The author's long experience in the retailing field, plus his wide acquaintance with other distributive educators, makes this book "the product of many minds," as the author expresses it. One quick glance at the contents reveals that the subject matter is logical in sequence. Each main division of retailing is given adequate treatment. At the close of each chapter the author includes a list of questions and points for discussion. He also lists some problems and projects for individual assignments as well as a number of suggested readings. The entire book is written in a language the average high school student can understand. The author clearly outlines methods and procedures to follow in order that retailers may be more successful in this fast and highly competitive industry.

The logical divisions of the book enable the reader to make a quick survey of the many job possibilities in retailing. Each chapter stimulates thought and discussion. The excellent pictures and charts throughout the book give the entire volume that new postwar look. The 18 photographs and biographies of famous personalities in retailing help to acquaint the novice with the who's who in America's third largest industry.

Since most retailers are dressing up "main street," the chapters on window display, retail advertising, and store location are particularly good. Some of the nation's foremost authorities on these subjects assisted the author by giving many helpful suggestions and by furnishing dozens of photographs and diagrams. Through these fine visual aids much valuable information can be obtained which should help the future retailers of America to keep abreast of the times. —*Arnold Zopf, Supervisor of Distributive Education, St. Louis Board of Education, Missouri.*

General Plastics, by Raymond Cherry. McKnight & McKnight, Bloomington, Ill.

This book, now in its second edition, contains two main divisions which might be classified as "How to do" and "What?"

While the larger portion of the book is devoted to concise and well-illustrated instructions on how to perform operations and how to construct objects of plastics (which may be selected from a list of half a hundred interesting and worthwhile projects), it also contains a smaller section devoted to the subject of "What Are Plastics?" This sets forth a brief and well-illustrated story of the various kinds of plastics now on the market. It includes a description of plastics that may be used and fabricated successfully in the usual industrial arts shop, and those which may be used in the commercial shop or factory.

In the section, "Hand and Machine Tool Operation," detailed instructions are given in the use of simple hand tools and inexpensive machines. This makes possible the offering of a course in plastics even in the small school shop with minimum equipment.

In the section on projects, there is listed a wide range of suitable materials and projects. After a student has successfully completed a number of these, his imagination will usually be stimulated and he will begin to work out articles of his own design.

In *General Plastics* the author has developed a book which should be of wide interest to students and teachers who wish to gain an insight into the fascinating field of plastics. With this book as a text in the hands of each student, a teacher with even limited experience should be able to get satisfactory results from beginning students. It would be an excellent book for a craftsman in his own home shop.—*Victor Randel, Head, Department of Industrial Arts, Sam Houston State Teachers College, Huntsville, Texas.*

Clothes for Girls, Elizabeth Todd assisted by Helen McCullough. D. C. Heath & Co., Boston, Mass.

This completely revised version of the always-popular 1935 edition is of as much interest and value to girls who do not expect to sew as to those interested in making clothes.

Part A deals with problems the girl is sure to meet whether she sews or not. Part B deals with problems in

making clothes, and Part C with construction references.

Exceptionally well-illustrated, appealing to adolescent interests, helpful to teachers seeking suggestions on providing for group activity as well as for individual problems, the book is an attractive, concise text on the most practical problems encountered by high school girls.—*Letitia Walsh, Head, Home Economics Education Department, University of Illinois.*

Elements of Radio Servicing by William Marcus and Alex Levy. McGraw-Hill Book Co., Inc., New York, N. Y.

The authors have made a scientific approach in the preparation of this book. The study of maintenance occupations in all fields should be approached scientifically and this should be no different in radio servicing than in the study of medicine.

Early study, as indicated by Marcus and Levy's book, might be classed as the *anatomy* of radio equipment. Other sections might well be called the *pathology* of such equipment. Logically, *diagnostic* procedures would be followed by *treatment.*

One of the most valuable features of this book is the service data charts in the diagnostic procedure and the problems at the end of the chapter calling for an outline of a service procedure in determining causes of trouble. It will be a happy day when all maintenance occupations are treated in this manner.

The writer has grown weary of reading text books that have been laboriously prepared by experts who dispose of the determination of ailments by "trouble shooting procedures." This is usually a case of guessing and if the first guess is not right, guess again.

One suggestion relative to the program of radio servicing: there might be study guides prepared for apprentices and journeymen, and unit trade work in radio servicing composed of assignments, study question, and objective tests, all pointed directly to Marcus and Levy's book.—*R. L. Welch, Supervisor, Trade and Industrial Education, Wisconsin.*

Jig Tooling Dictionary, by T. G. Thompson and R. A. Peterson. The Macmillan Co., New York, N. Y.

This book is just what the title indicates: a dictionary which gives definition to all of the terms covering materials, supplies, equipment, processes, and operation (both mechanical and technical), tools, and instruments used in making jigs and tools. It contains all necessary information in tabular form and the geometric and trigonometric formulas with samples of manipulation and standards of machine parts necessary to the design of jigs and tools.

There is a noticeable leaning toward the aircraft industry but not to the neglect of other industries.

The material is arranged concisely with clear diagrams supporting each definition.—*Walter J. E. Schiebel, Principal, Dallas Independent School District, Texas.*

Teaching

(Continued from page 11)

plans, study reference material, and plan supervision for the next period to be covered. Most of these meetings are held on a county basis and are proving valuable to both the assistant teacher and the responsible county officials.

Supervision has helped maintain high standards. Institutional on-farm training in Tennessee has been incorporated as a definite part of the regular vocational agriculture program. Since the state already had highly trained vocational agriculture teachers in the counties and communities their talents and experience were utilized in making this program a success. In a few counties where there were no regular vocational agriculture teachers, the State Board required that the first teacher employed for veterans should be an agricultural college graduate with a major in agricultural education. He was made responsible to the superintendent and county board of education for technical supervision of all other assistant agricultural teachers. After nearly two years of operation, it seems evident that this is a satisfactory method of supervising the program.

As institutional on-farm training continues, the progress of each trainee is carefully checked and evaluated. This aids the assistant teacher in determining effectiveness of his teaching and indicates the degree of progress the trainee has made in both class work and farming program.

All farming enterprises common to Tennessee agriculture have been listed, together with the approved practices for each. At the beginning of the training year the teacher, by individual guidance, aids the veteran in selecting approved practices applicable to the farming program which he plans to carry out. Each approved practice is weighed according to its relative importance to the veteran in establishing himself in the business of farming.

The veteran is graded at the end of each three months' period and is given credit for all approved practices completed during that period. At the end of the year a final check is made and progress is determined by comparison of goals in approved practices set up at the beginning of the year with those completed. The teacher may grade border line students at any time to determine if they are making required progress in order to continue in training. Every effort is made to assist below standard students to meet minimum requirements. When it is determined that they are unable to meet the standard, their training is interrupted.

The check provides the teacher with all available details for sound counsel with each veteran, to determine corrective measures necessary for future progress.

Book on Livestock

The Food and Agricultural Organization of the United Nations has issued an 182-page volume, "Breeding Livestock Adapted to Unfavorable Environments." It is available from International Documents Service, 2960 Broadway, New York City, for $1.50.

Apprentice

(Continued from page 12)

need for supplementary materials to use with the text does not lessen the need for, or value of, the well-organized textbook. It should, however, point out for the publisher that the job is only half done when the textbook is on the market.

A study guide, of expendable type, presenting a series of fairly short units based upon the text, provides each student with a program to be followed according to his own ability. A self-check test on each unit, composed of objective type questions prepared by someone experienced in the psychological method of wording such a test, allows each to determine his own accomplishments. Each test organized to require review of previously completed materials and to point to what is to come, accomplishes directional individual progression.

The modern study guide follows this pattern and to these features adds the many requirements enumerated here as needs in apprentice training.

While this might appear to throw to the publishers the job of preparing all instructional materials, the best vocational textbooks come from vocational teachers. It might be suggested that the old "must," trade analysis, which remains a requirement in the vocational teacher training programs of many states, might be replaced by a course in the construction of study guides.

Recommended for Related Instruction in Mathematics

ESSENTIAL VOCATIONAL MATHEMATICS
C. H. Ewing and W. W. Hart

PRACTICAL ELECTRICAL MATHEMATICS
William Rasch

PRECISION SHOP MATHEMATICS
William H. Edwards

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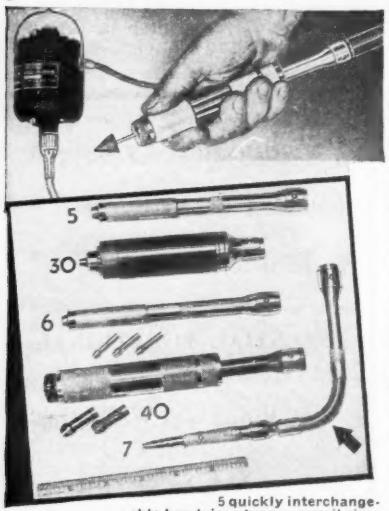

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With the Associations

★ Margaret Keith, Greenville, has been elected president of the South Carolina Vocational Association, succeeding Evelyne McCollum, Columbia, who resigned to enter private business. Miss Keith is a teacher of distributive education in the Greenville city schools.

The annual meeting of the S.C.V.A. will be held March 18 and 19 in Columbia. At a special meeting of the officers of the association, a tentative program was arranged. Fred T. Wilhelms, associate director of consumer education study for the National Association of Secondary School Principals, and S. L. Latimer, Jr., editor of the Columbia *State*, will be speakers.

★ Utah Vocational Association members who attended the AVA convention were President Robert Dahle; Vice President, T & I, Edward C. Larsen; Irvin S. Noall, chairman of the legislative committee; H. B. Gundersen, Mark Nichols, Aileen Ericksen, R. A. Nelson, Winston M. Crawford, all state school staff members; local directors Lorenzo E. Peterson, Weber Junior College; Wilson W. Sorensen and Reed R. Allen, Central Utah Vocational School; E. C. Jeppsen, Utah State Agricultural College; C. B. Cooley, Branch Agricultural College; Ralph V. Backman, Salt Lake Adult School. At the Earl Carroll Theatre-Restaurant "Bob" Nelson won the bottle of champagne.

The Utah State Department of Public Instruction has published a State Plan for Related Instruction for Veterans in on-the-job training. It is a manual for local directors, supervisors, and coordinators and contains occupational area and subject area titles for related instruction for 113 occupational areas or more than 653 payroll jobs. Occupational areas are worked out on a job family basis and subject areas determined from advisory committee recommendations, apprenticeship standards, and conference discussions.

★ Tennessee Vocational Association will meet on March 19, in conjunction with the Tennessee Education Association meeting in Chattanooga. The afternoon meeting will be the joint meeting of the TVA, the School Administrators, and High School Principals section of the TEA. Meetings will be held on the campus of the University of Chattanooga. There will be an explanation and description of the four phases of the vocational education program in the state and what it is attempting to accomplish. A panel discussion by some members of the School Administrators' and Principals' groups will be followed by a speech by C. M. Miller, director of vocational education in Kansas. Each of the four vocational services will have a short business meeting, and banquet may be arranged.

★ The 20th annual convention of the Michigan Industrial Education Society will be held in Grand Rapids April 8, 9, 10, with headquarters at the Pantlind Hotel. Frank Moore, director of industrial arts education, Cleveland, will be the banquet speaker and Karl Detzer, *Reader's Digest* roving editor, will be speaker at the Ship's Luncheon.

★ The division of vocational education of the Arkansas State Department of Education, in cooperation with the agriculture department of Arkansas State College, is sponsoring district FFA agricultural contests to be held at State College, Jonesboro, April 2 and 3.

★ The 13th annual state meeting of the Alabama Association of Future Homemakers of America will be held at Alabama College June 2, 3, and 4.

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Who's Who

Miss Catherine Dicks, supervisor of student teachers at Las Cruces Union High School, New Mexico, has been appointed itinerant teacher trainer for the state department of vocational education.

Five new members have been added to the North Dakota Agricultural College home economics teaching staff: **Elizabeth Hull,** formerly of Missouri, assistant to the state supervisor of vocational home economics; **Alberta Hill,** formerly in Idaho, assistant teacher trainer; **Mildred Schmidt,** formerly of Oklahoma A & M College, instructor in foods; **Elvira Lindquist,** formerly of Cornell College, Iowa, instructor in clothing; **Helen Twogood,** instructor in related arts.

Harry W. Porter, assistant professor of trade and industrial education at Purdue University, has completed his Ph.D. in industrial psychology. Dr. Porter was employed on the staff of the State Board of Vocational education before joining the staff at Purdue, and obtained his Masters at Colorado A & M, Fort Collins, in 1939.

W. T. Reed, formerly principal of Sussex County Training School, Waverly, Va., is now director of trade and industrial education at St. Paul's Polytechnic Institute, Lawrenceville, Va.

Thomas Dean has assumed his position as a shop teacher at Iowa State College, Ames, Ia.

M. J. Ruley, coordinator of diversified occupations and director of adult education, has been appointed director of industrial arts and vocational education, Tulsa, Oklahoma. Mr. Ruley has been connected with the Tulsa schools since 1934, for the past six years as coordinator of diversified occupations at Central High School. In 1941 he joined the staff of the State Department of Trade and Industrial Education as assistant state supervisor of the War Training program, returning to Tulsa as assistant director of the program. **George I. Marsh** succeeds Mr. Ruley as coordinator of diversified occupations and director of adult education. Mr. Marsh came to the Tulsa schools from Fort Worth where he had been director of vocational education.

Dr. B. F. Pittinger has retired as dean of the college of Education, University of Texas.

In Tribute

R. H. Roberts, director of industrial arts and vocational education, Tulsa, Okla., died Nov. 20, 1947. He had been connected with the Tulsa schools since 1941 except for a period during the war when he served as area training supervisor for the War Manpower Commission.

Supervision

(Continued from page 22)

Provision of proper equipment promotes good classroom teaching. Planning with the teacher and the home economics class for needed room improvements or equipment stimulates interest and growth.

Demonstration teaching and demonstrations on the use of special equipment or new methods are effective.

School visitation is an important part of supervision. At the first of the school year a joint meeting with principal and home economics teachers is held in each building. Problems which require the attention of both supervisor and principal are discussed such as scheduling, class size, lesson plans, discipline, pupils who fail to bring equipment and supplies. This is an excellent opportunity to develop a common understanding of the philosophy and objectives of the homemaking program in each building.

Some class visits are made by appointment; others are unannounced. Since there are many demands for outside activities, it is necessary to plan ahead for a class visitation and after-school conference, but a supervisor frequently should call informally so that teachers and pupils will be at ease when she comes.

These and many others make up activities of the supervisor who would reach the goal of supervision—improvement of instruction.

D. Van Nostrand Co. Reaches Century Mark

One hundred years in the publishing business. That is the anniversary D. Van Nostrand Company, Inc., of New York, is observing this year.

David Van Nostrand, founder of the company, started his bookselling and publishing business under the name of Van Nostrand & Dwight, but the partnership did not last long, and in 1848 Mr. Van Nostrand established his own business and began publishing books under his own imprint.

The company issues books for high schools, vocational schools, and colleges; for craftsmen and sportsmen; for scientists and laymen and books for the home.

The company has pioneered in more than one field. Its "science series" totaled 127 titles before it was completed in 1900.

Today Van Nostrand's books for high schools and vocational schools are well known and its 1948 publishing schedule is one of its largest lists.

In observance of its anniversary the company has issued a series of catalogs for 1948. Its high school and vocational school catalog lists books on aeronautics, agriculture, automotive mechanics, biology, chemistry, crafts, drawing and drafting, economics, electricity, radio, television, electronics, health and safety, mathematics, physics, shop work, and special studies.

Products and Services Guide

To obtain free literature, samples of goods, and information about the products advertised in this issue, check the items desired and mail this master coupon directly to the AMERICAN VOCATIONAL JOURNAL, 220 E. 42nd St., New York 17, N. Y.

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Sound Recorder Parade

Many New Models Among 19 Tape, Wire and Disc Recording Machines

By William J. Temple, Brooklyn College Audio Visual Committee

THE most exciting recent development in teaching aids is the magnetic recorder. The quality of a magnetic recording is far less dependent on the operator's skill and experience than the quality of a disc recording. Good quality in a disc recording requires, among other things, expert adjustment of the stylus angle and pressure. Those factors are not present in recording on magnetic wire or tape.

The discs in common use are limited to a few minutes of playing time, but the magnetic wire and tape machines provide a half-hour, an hour, or even as much as eight hours of uninterrupted playing time.

Unwanted parts of a disc record cannot be removed without re-recording, but tapes can be edited by simply cutting them and splicing the cut ends with adhesive celluloid tape, and wires by cutting and knotting.

A spoiled disc is useless, but tapes and wires can be used over and over again because previously recorded magnetic patterns are automatically erased in the recording process.

On the other hand, disc records have the great advantage that they can be played on any school or home phonograph, and your students can take their records home for study. Also, it is easy to spot and replay a part of a disc recording, but not a part of a wire or tape recording.

You Can't Have Everything

Tape has some advantages over wire as a magnetic recording medium. Quarter-inch paper or plastic tape does not snarl as readily as wire four or five thousandths of an inch thick. For technical reasons related to the thickness of the magnetic material, wire must be pulled through the recording head at a much higher speed than tape to produce equivalent quality in the recording. This gives rise to mechanical problems in the design and manufacture of the wire recorder.

Tape always presents the same face to the recording or playing head, whereas wire may become twisted (especially in splicing it) and hence not present its magnetic side to the head, with resulting loss in strength and quality. (Did you ever try to pick up a needle with the curved back of a horseshoe magnet?)

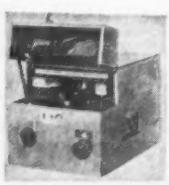
Most tape recorders pull the tape by means of a "capstan" which turns at constant speed, so that the tape speed is the same at all parts of the record. Some low-priced wire recorders pull the wire by rotating the spool on which the wire winds up, so that the wire travels faster at the end of the record when the take-up spool is nearly filled. This means that in editing a wire record you cannot join a length of wire from the beginning of a spool with a length from the other end without a disconcerting change in the pitch of the reproduced voice or music.

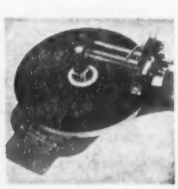
Wire recorders are frequently smaller, more compact, and lighter in weight than tape recorders. This is a factor to consider when portability is an advantage. If you propose to keep a large library of recordings you will notice that the spools of wire take up less storage space than reels of tape.

Keep these things in mind while you are comparing the recorders described below. You can't have everything!

Remember, too, that for good quality in reproduced sound, low distortion is at least as important as wide frequency range. The loudspeaker is often the limiting element in a reproducing system. The better the speaker, the lower the distortion and the wider the frequency response range. Almost every recorder on the market provides connections for a separate speaker even though it includes a small "monitoring" speaker. Your separate speaker must match the output of your amplifier, and it should be as good a speaker as you can afford to buy.

The descriptions which follow are based on the most recent data we could get from the manufacturers. Some of the machines are so new that they have not been widely displayed or demonstrated. A number of manufacturers are not yet ready to disclose their models.





Disc Recorders: Speak-O-Phone, Sound Scriber, Presto, Rek-O-Kut.

DISC RECORDERS

Speak-O-Phone Model HR-48 ($110) (*Speak-O-Phone Recording Equipment Co., 23 W. 60th St., New York 23, N. Y.*) has a 2-speed turntable and a 4-tube amplifier mounted in a portable case 17½ x 15½ x 11½, shipping wt. 36 lb. The cutting head is of the magnetic type.

Meissner Mfg. Div., Maguire Industries, Inc., Mt. Carmel, Ill., makes a combination recorder and radio receiver (about $115) with 2-speed turntable, crystal cutting head, crystal pickup, and crystal microphone. Built-in loop antenna gives adequate reception for recording or listening (more distortion in recording than in reception). Maximum recording time about 9 minutes at 33 1/3 and about 6 minutes at 78 rpm (revolutions per minute).

These inexpensive machines lack the mechanical and electrical refinements which are necessary to produce recordings of highest quality, and you should not expect them to stand up indefinitely under continuous service. An experienced operator can make useful records on them.

The Sound Scriber (*Sound Scriber Corp., New Haven, Conn.*) comes in a great variety of models. It is a widely used dictating machine which records at slow turntable speed on thin, flexible plastic discs – about 15 minutes on each side of a 7" disc. A portable combination recorder and transcriber weighs about 20 lb., costs about $340. Discs cost about 10 cents each. Fidelity is adequate for communication and language instruction.

Presto Model K (*Presto Recording Co., 242 W. 55th St., New York 19, N. Y.*) ($348 without microphone) is a dependable, standard disc recorder. Its magnetic cutting head and pickup have a frequency response range of 80-5000 cps (cycles per second). Uses standard lacquer-coated ("acetate") discs up to 13¾" at either 33 1/3 or 78 rpm. Volume indicator is a meter, not a neon bulb or "magic eye." Portable; 19⅜ x 15½ x 14; 46 lb. Presto also makes other models; all more expensive.

Fairchild Unit 539 (*Fairchild Camera and Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.*) is a portable, professional disc recorder with a 16", 2-speed turntable. Cutterhead and pickup response 30-10,000 cps. Size 18 x 22 x 13; 80 lb. Requires additional amplifier and accessories. A beautiful instrument which does a professional job in the hands of a com-

(Continued on page 38)

For further information write directly to the companies mentioned in this article.

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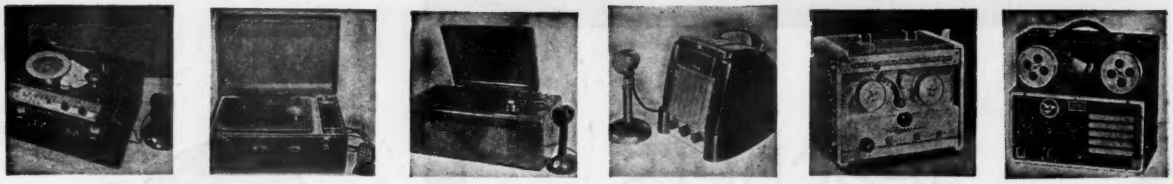


Tape Recorders: Air-King, Wireway, Wiretone, RCA, WiRecorder, Peirce.

Sound Recorder Parade

(Continued from page 36)

petent technician. Other models up to $2500.

The Rek-O-Kut Co., 146 Grant St., New York 13, N. Y. manufactures professional-type turntables, recording mechanisms, and accessories with which high quality disc recording systems can be built up. Prices for 2-speed turntables (unmounted) run from $79.50 to $195.45; recording mechanisms $175 to $215. Console cabinets for mounting these components cost $129; a portable carrying case is $59.

WIRE RECORDERS

Air-King Model A750 ($129.50) (*Air-King Products Co., Inc., 1523 63rd St., Brooklyn, N. Y.*) is a portable combination wire recorder and phonograph reproducer, the take-up reel being modified to act as the phonograph turntable for records up to 12" at 78 rpm. The frequency response is 85-5000 cps and the power output about 1 watt. The wire speed of approximately 2' per second gives a maximum playing time of 1 hour. Rewind speed is 6 times playing speed. Can be attached to radio receiver. 17¼ x 13¾ x 9; shipping wt. 35 lb.

Wireway ($149.50) (*Wire Recording Corp. of America, 1331 Halsey St., Brooklyn 27, N. Y.*) is a similar portable combination wire recorder and phonograph, with the addition of a "wireless record player" arrangement which makes it possible to play back either wire or disc records through any radio receiver within 150 feet, as well as through its own built-in speaker. Leather-covered case; 18 x 11½ x 8; 23 lb.

Wiretone ($149.50) (*Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.*) combines not only a similar wire recorder and phonograph, but also a superheterodyne radio receiver built into its walnut-finish cabinet. The size is 8 x 20 x 11. The microphone is sold separately for $7.50; extra spools of wire at $1.95 for ¼ hour, $2.95 for ½ hour, $4.90 for 1 hour.

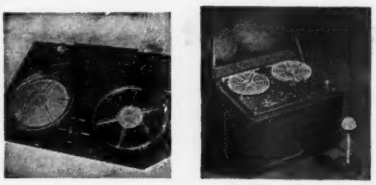
The RCA Wire Recorder (about $135) (*Radio Corporation of America, RCA Victor Div., Camden, N. J.*) uses wire enclosed in a cartridge so that the wire itself is never seen nor touched by the operator. Cartridges (about $12.50 for ½ hour) can be changed in 1 second. Wire speed is constant. Frequency response 100-4000 cps; power output 3 watts. 9¾ x 12½ x 9¾; 24½ lb. Built-in ventilating fan for cooling.

Webster Model 80 ($149.50) *Webster-Chicago Corp., 5622 Bloomingdale Ave., Chicago 39, Ill.*) weighs 27 lb. and measures 17¾ x 11¾ x 7½ in its carrying case. Contains 3-tube amplifier and 6" speaker; connection for external speaker provided on front panel. Maximum playing time one hour. A foundation unit consisting of the wire mechanism only, for use with your own amplifier and accessories, is available for a little more than $50.

Polyphonic Sound (list price $350) (*Electronic Sound Engineering Co., 4344 W. Armitage Ave., Chicago, Ill.*) combines the Webster foundation unit with an amplifier capable of reproducing the range from 40 to 12,000 cps with negligible distortion, and a 6" speaker said to respond up to 10,000 cps. A *Jensen* dual channel speaker is available at additional cost.

WiRecorder Model PA ($153; requires also model A25 amplifier with microphone and speaker at $79.50) (*WiRecorder Corp., 7055 Intervale Ave., Detroit 4, Mich.*) has frequency response flat within 5 db from 70 to 7000 cps. Wire speed 24" per second. Power output 5 to 7 watts. Wire is automatically released from head in rewinding, in order to prevent wear. Recorder and amplifier are mounted in matching cases, 12 x 10 x 10.

The Peirce Dictation Wire Recorder



Tape Recorders: Magnesonic, Soundmirror BK-401.

(about $450) (*Peirce Wire Recorder Corp., 1328 Sherman Ave., Evanston, Ill.*) is a well-designed and substantially built portable weighing about 30 lb. The response is flat between 150 and 5000 cps, and the distortion and noise are low. Wire speed is 2½' per second; rewind speed twice as fast. Playing time 1 hour. Many accessories for varied uses are available.

Magnetone (*Brush Development Co., 3405 Perkins Ave., Cleveland, O.*) uses plated brass wire in lengths up to 3 hours. Response is 55-7000 cps. Wire speed is constant at 24" per second. Rewind speed and fast forward (nonplaying) speed is 15 times playing speed. Weight in carrying case, 50 lb.

TAPE RECORDERS

Magnesonic ($179.50) (*Sound Recorder and Reproducer Corp., 5501 Wayne Ave., Philadelphia 44, Pa.*) appears to be thoughtfully designed and engineered. Fairly flat response 30-8000 cps (amplifier alone 30-20,000 cps). Output 8 watts, which indicates low distortion at operating levels. Tape speed 7½" per sec. Playing time 30 min. Rewind time 2 min. Fast forward speed provided for locating passages. Table model.

The Soundmirrors, and the Magnetapes which follow, differ from the wire recorder and the Magnesonic in requiring rethreading of the tape for rewinding. Rethreading on these machines is less bother, however, than the similar operation on a movie projector.

Soundmirror Model BK-401 ($229.50) (*Brush*) is a 40 lb. table model. Response 100-5000 cps. Tape speed 7½" per second, playing time 30 min. External connections for radio and speaker. Has been widely used in broadcasting as well as in schools and homes since its introduction about a year ago.

Soundmirror Model BK-403 ($367.50) (*Brush*) is mounted in a carrying case, and has provisions (interchangeable capstans) for two tape speeds: 4½" and 7½" per sec. The slower speed gives nearly twice the playing time with a corresponding decrease in frequency response. Rewind time 45 sec. Monitor speaker is 6" x 9" oval—bigger and better than 6" circular cone.

Magnetape (*Amplifier Corp. of America, 366-398 Broadway, New York 13, N. Y.*) is made in ten different models, all using a tape driving and rewinding mechanism like that of the Brush Soundmirror. Model 800A ($239) has distortion under 5%, response 80-8000 cps, tape speed 7½" per sec., playing time 30 min., rewind time 30 sec. Model 800B ($263) has same playing and rewind time, but wider response (70-9000 cps) and lower distortion (under 3%). Model 800E ($312) plays 1 hour at a tape speed of 4" per sec. with a response of 80-5000 cps. Model 800F is the "high fidelity" version, with a tape speed of 15" per sec., playing time 15 min., and response 60-12,500 cps. Model 800G ($351) with two extra capstans at $25 each gives equivalent to that of 800B, E, or F, at your convenience. All these are table models. Any of them will be mounted in a portable carrying case with a matching accessory case for $42 additional.

Magnetape Models 900B to 900G are capable of accommodating larger reels of tape, giving 3¾ to 8 hours of continuous recording. They are priced from $545 to $727.

Magnetape accessories include the E-Z-Cue device for locating parts of a tape record, an automatic program timer for recording radio broadcasts in your absence, and other useful and ingenious gadgets, as well as a book called "Elements of Magnetic Tape Recording and 999 Applications," by A. C. Shaney, 25 cents.

For further information write directly to the companies mentioned in this article.

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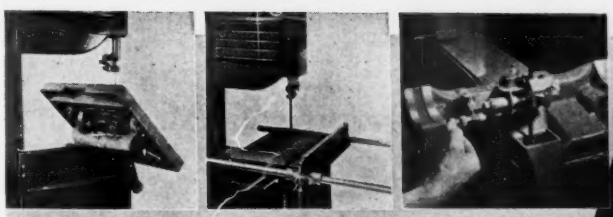

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Heavily-ribbed table is slotted to accommodate miter gage. It is also adaptable to use of a rip fence, as shown.

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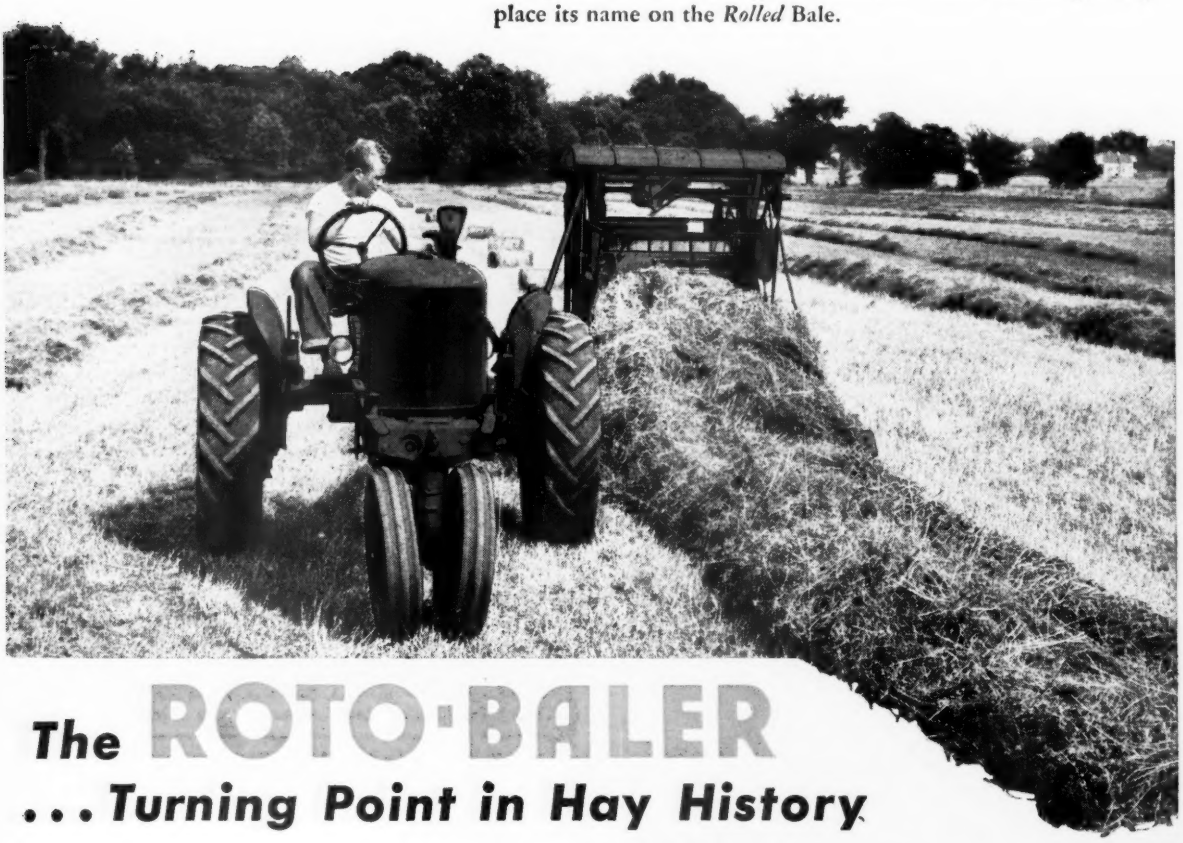

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